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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification 7 :</b> <b>H04N 7/173</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 00/67484</b>  <b>(43) International Publication Date:</b> 9 November 2000 (09.11.00)
<b>(21) International Application Number:</b> PCT/US00/11383 <b>(22) International Filing Date:</b> 28 April 2000 (28.04.00)  <b>(30) Priority Data:</b> 60/131,980      30 April 1999 (30.04.99)      US  <b>(71) Applicant (for all designated States except US):</b> THOMSON LICENSING S.A. [FR/FR]; 46, quai Alphonse Le Gallo, F-92648 Boulogne Cedex (FR).  <b>(72) Inventor; and</b> <b>(75) Inventor/Applicant (for US only):</b> WILLCOX, Michael, Eugene [US/US]; 7577 South 1075 West, Knightstown, IN 46148 (US).  <b>(74) Agents:</b> TRIPOLI, Joseph, S. et al.; Thomson Multimedia Licensing Inc., P.O. Box 5312, 2 Independence Way, Princeton, NJ 08543-5312 (US).		<b>(81) Designated States:</b> AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>
<b>(54) Title: E-COMMERCE TELEVISION</b>		
<b>(57) Abstract</b>  <p>A system and method for providing automated television shopping performs automatic telephone dialing for product purchase. Auxiliary information communicated with the television programming provides a user selectable icon or area that corresponds to an item, product or service to be purchased. The icon may be a part of or constitute an advertisement that is divorced from the television programming or may be associated with the television programming. Selection of the icon by the user via a control system begins the ordering process by establishing a back channel connection from the television to a dedicated call center modem/computer preferably by a modem in the television. User data previously stored by the television may be initially communicated to the call center computer. The user is signaled via an on-screen display message to speak with the live agent once the live agent is available to complete the transaction while the television drops the connection to allow the user and agent to continue with minimal interchange.</p>		

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## E-COMMERCE TELEVISION

### Cross Reference to Related Applications

This is a non-provisional U.S. patent application based on provisional U.S.  
5 patent application serial number 60/131,980 filed April 30, 1999 entitled  
"eCommerce Enhancement Using eTV for Automation."

### Field of the Invention

The present invention relates to television systems and, more particularly,  
10 to television systems which utilize the auxiliary information associated with a  
television program signal to establish a communication channel.

### Background of the Invention

Today, television programming for the home viewer is available from many  
15 sources such as, terrestrial broadcasting, cable distribution, satellite broadcasting  
or the like. The television programming may be provided in an analog and/or  
digital format. In either case, the television programming includes audio and  
video information for a plurality of channels and may also include other  
information, for example, closed captioning, program ratings ("V-chip"),  
20 stock/data tickers, or the like.

Typically advertisements associated with television programs encouraged  
viewers to purchase a product or service the next time they went shopping or  
needed the service. With the widespread use of credit cards and the like, the  
use of toll-free telephone numbers displayed along with the commercial permitted  
25 the viewer to call and immediately place an order for the product or service.  
Today, networks such as QVC® and the Home Shopping Network® devote their  
entire programming to selling products and services. With advances in television  
broadcasting and reception technology, advertisements for products and/or  
services may now be sent along with the audio and video information for use  
30 with electronic program guides (EPGs) or the like, and displayed on the television  
integral with the EPG or the like.

However, in all of the above cases, a viewer must either call a telephone number, and tender payment by credit card or mail in payment in order to purchase the product/service being advertised on the television. Ordering via the telephone is generally a time-consuming and frustrating event for the consumer.

5 Telephone operators are busy during the times when the infomercial or advertisement is being aired and thus the consumer is faced with telephone busy signals and being put on hold. If the consumer does not reach an operator, he/she will generally not call back.

## 10 Summary of the Invention

The present invention provides an in-home shopping system that permits a user to initiate a purchase of a product or service in response to viewing an advertisement on the user's television without utilizing the Internet. Particularly, the present invention assists the user by establishing a telephone connection  
15 with minimal user involvement. That is, the home shopping experience is improved by reducing the time spent on the telephone when ordering products advertised on the television.

Further, the present invention provides a system for advertising a product on a television and for providing a means for ordering the product via the  
20 television. The purchase transaction may be partially accomplished by the television through the transfer of user data previously stored in the television. In one form, the present invention is a television system comprising: a) a receiver configured to receive a television signal and auxiliary data associated therewith, the auxiliary data permitting a user to initiate the purchase of a product or service  
25 associated with the television signal; b) memory coupled to the receiver and adapted to contain user information; and c) communication means for automatically establishing a connection with an order center in response to the user.

In another form, the present invention is a method of in-home shopping  
30 utilizing a television system. The method comprises: a) receiving a television signal comprising auxiliary data associated with the television signal; b) displaying a selectable purchase initiation icon for the purchase of the product or

service associated with the television signal in response to at least a portion of the auxiliary data; c) selecting the purchase initiation icon to initiate the purchase of the product or service; d) establishing a data connection between the television system and an order center for the product or service; e) downloading  
5 user information stored in the memory to the order center after establishment of the data connection; and f) establishing a voice connection between the user and an agent of the order center.

In yet another form, the present invention is a television operable to provide in-home shopping. The television comprises: a) a selector operable to  
10 receive a television signal having an advertisement for a product or service and associated auxiliary information; b) a processing unit; c) a display operable to show the television signal and the advertisement; d) an on-screen display unit operable to produce a selectable initiate purchase icon on the display for the purchase of the product or service of the advertisement in response to the  
15 auxiliary information and in conjunction with the advertisement; e) a control system operable to allow a user to select the initiate purchase icon; f) communication means operable to establish a data connection, download information, and establish a voice connection; and g) memory in communication with the processing unit, the memory containing user information and a plurality  
20 of instructions which, when executed by the processing unit causes: 1) the communication means to establish the data connection between the television and a remote order location upon the user selecting the initiate purchase icon to initiate a purchase transaction for the product or service of the advertisement; 2) the communication means to download the user information upon establishment  
25 of a data connection between the television and an order location; and 3) the communication means to establish a voice connection between the user and an agent of the order location upon completion of the downloading of the user information.

#### Brief Description of the Drawings

30 Reference to the following description of the present invention should be taken in conjunction with the accompanying drawings, wherein:

Fig. 1 is a block diagram of a system for advertisement delivery to a user's television;

Fig. 2 is an enlarged depiction of a remote that may be used as a control device;

5 Fig. 3 is a block diagram of the present system in accordance with the principles of the present invention;

Fig. 4 is a depiction of a television display incorporating the selectable auxiliary information;

10 Fig. 5 is a depiction of a television display after selection of auxiliary information;

Fig. 6 is a depiction of a television display after commencing the ordering process from the television display of Fig. 5;

Fig. 7 is a depiction of a television display upon selection of a SELECT function from the television display of Fig. 6;

15 Fig. 8 is a depiction of a television display upon completion of data exchange between the television and a remote call center;

Fig. 9 is a block diagram depicting an alternative method of communication for the present system; and

20 Fig. 10 is a flow chart of an exemplary advertising and ordering/purchasing process in accordance with the principles of the present invention.

Corresponding reference characters indicate corresponding parts throughout the several views.

### Detailed Description of the Invention

25 With reference now to Fig. 1, there is shown a block diagram of a system, generally designated 20 for the development, insertion, and broadcast or transmission of an advertisement or the like to a remote television. The advertisement incorporates auxiliary information or data at least some of which is selectable by the user of the remote television in accordance with an aspect of  
30 the present invention. It should be appreciated that the term *advertisement* means a commercial of any length including what are known as infomercials, a still frame, picture or graphic, or any audio/video presentation, animated or not,

for an offer to sell a product, good and/or service that is able to be formatted and broadcast as or within a television signal. *Auxiliary information* includes data that allows the television to display a selectable icon or icons or a selectable area or areas on the television typically within the advertisement, generally through an on-screen display (OSD) unit. *Auxiliary information* also includes data for communicating information concerning a selection from the television via a back channel to a call center or the like. The auxiliary information may contain software for operating the television 32 or for providing additional functionality thereto.

10 In particular, a produced or created advertisement 22 having embedded or added auxiliary information or data is stored in a central system, computer or server 24. The server 24 transmits or delivers, as depicted in box 26 one or more of the advertisements stored therein to a television broadcast station 28 where the advertisement and auxiliary information is incorporated into the television signal. Transmission or delivery of the advertisement or  
15 advertisements and auxiliary information may be accomplished via any method such as by the Internet, a public switch telephone network (PSTN), or similar delivery medium. The broadcast station 28 then broadcasts, represented by arrow 30, the advertisement and auxiliary information along with the television  
20 signal. Broadcasting includes terrestrial, cable, satellite, or any other manner of transmitting a television signal from one point to another point.

The advertisement and auxiliary information may be recorded and stored on a reproduction medium (i.e. a tape) and transported to a broadcasting facility for incorporation into the television signal. As well, the advertisement and  
25 auxiliary information may be directly broadcast after being generated.

In the case of an analog television signal, if the advertisement is a still picture, graphic or the like, the advertisement and auxiliary data are preferably formatted into the vertical blanking interval (VBI) of the television signal. If the advertisement is a commercial or infomercial having audio and video content, the  
30 commercial may be transmitted as a normal television signal with the auxiliary information transmitted in the VBI. Thus, in the case of an analog television signal, the auxiliary information is preferably inserted into the VBI, while the



advertisement itself may be in the VBI or transmitted as a television signal. In the case of a digital television signal, both the advertisement (in whatever form) and the auxiliary information are formatted or packetized for digital transmission in accordance with the chosen encoding scheme and modulation technique as are known in the art.

Various signal formats for embedding the auxiliary information in the television program signals are available. For example, a protocol known as ATVEF proposed by the Advance Television Enhancement Forum, an alliance of television communication and computer companies is advantageous. The protocol is based on the HTML (HyperText Markup Language) utilized in the Internet. The ATVEF protocol also may be used with both analog and digital television systems. Of course, other protocols may be used.

The broadcast television signal is received and processed by a television 32. The television 32 includes a display 34 that is depicted showing an icon 36 that is selectable by a user 38 through a suitable control system for the television 32, the icon 36 being sent as at least a portion of the auxiliary information. Selection of the icon 36 and other television control functions as are known in the art are preferably performed via a remote control unit (remote) 40. It should be appreciated, however, that other television control methods may be used. The remote 40 may be used to highlight an area of the display 34 or move a cursor or the like to a particular area on the display 34.

In Fig. 2, there is shown the remote 40 in greater detail. The remote 40 usually includes at least a channel up button (CH+), a channel down button (CH-), a volume up button (VOL+), and a volume down button (VOL-). In addition, a SELECT button is provided for allowing the selection of a highlighted icon, menu choice or the like shown on the display 34. In addition, the remote 40 includes various navigation buttons 42 that at least permit the user 38 to highlight a particular icon or menu choice and/or position a cursor onto or over a particular area of the display 34. A typical remote also includes a plurality of other control/selection buttons that are not depicted in Fig. 2 for clarity with regard to the present invention depending on the features of the television. The remote 40 is preferably an infrared (IR) type remote but may be radio frequency

(RF) or any other type that allows control signals to be transmitted therefrom and received by the television 32. The television 32 must, of course, be configured and/or adapted to receive whatever type of signals are transmitted/sent from the remote 40.

5           Once the advertisement is received by the television 32, the advertisement and other information may be shown on the display 34 of the television 32 in a variety of ways depending on the format of the advertisement. If the advertisement is a still (single) frame, picture or graphic with or without text, it may be displayed in conjunction with any television programming on any  
10   channel. The entire advertisement or a portion thereof is selectable to initiate the ordering process. If the advertisement is a commercial, infomercial, network, or the like having video and possibly audio content, the advertisement may consist only of a selectable icon or area, such as an "Order Now" icon that is displayed over or along with the video content.

15           With reference to Fig. 3, there is depicted the television 32 incorporating a block diagram of the various components of the television 32 that allow the television 32 to operate in accordance with the principles of the present invention. The television 32 includes a television signal selector or tuner 44 that is configured to receive a television signal/advertisement as described above.

20   The selector 44 is in communication with a central processing unit (CPU) 48 as is typical in the art. An IR interface 54 is in communication with the CPU 48 and is adapted to receive the control signals from the remote 40. It should be appreciated that if the remote 40 operates other than by infrared, the IR interface 54 represents an interface/circuitry necessary to receive the signals from the  
25   remote 40.

          The television 32 also includes read only memory (ROM) 50 and random access memory (RAM) 52 as are well known in the art. The television 32 further includes an on-screen display (OSD) processing unit 46 that is in communication with the CPU 46 and is configured to provide the display 34 with OSD  
30   information. The OSD processing/generating unit 46 allows the display of selectable icons on the display 34. OSD information is part of the auxiliary data transmitted with the advertisement.

The television 32 may also include a two-way pager circuit 58 that is in communication with the CPU 48 the purpose of which will be described below with reference to Fig. 9. As well, the television 32 may include a modem 56 or similar device that is in communication with the CPU 48 and a telephone network 62, such as a public switched telephone network (PSTN) as is known in the art. A conventional telephone 60 is also in communication with the telephone network 62. It should be appreciated that the television 32 and telephone 60 are typically located in the user's home. Other interconnections of the various components of the television 32 that are not shown are possible and probable.

With reference to Fig. 4, there is depicted the television 32 showing a screen layout particularly depicting an electronic program guide (EPG) or listing 74 on the display 34. The EPG 74 is a typical EPG grid that lists a plurality of programs/listings (of which the listing "ABC Nightline" 76 is shown) within current and upcoming time slots that may be viewed on the various channels of the television 32. The listing 76 is outlined to denote that it is highlighted. Such highlighting can be moved around the EPG 74 and the various other areas on the display 34 through the use of the navigation keys 42 on the remote 40 (see Fig. 2). If the user 38 selects the highlighted program listing (here via the SELECT button on the remote 40), the television is tuned to that channel and the EPG 74 is removed from the display 34.

It should be appreciated that the EPG 74 described herein is only exemplary and/or representative of a manner of providing/presenting an advertisement or advertisements with auxiliary information as per the principles of the present invention. The advertisement(s) may be provided in other manners not depicted and/or particularly described herein such as an advertisement area overlaying or adjacent a television program and/or an advertisement icon overlaying an infomercial, commercial, or the like.

In Fig. 4, the EPG 74 may include a header area 80 where various header information may be displayed, a live video area 82 in which live video is shown generally relative to the program highlighted on the EPG grid 74, a first display advertisement area 84, and a second display advertisement area 86. The first

and second advertisement areas 84 and 86 may or may not include OSD auxiliary information that is selectable in accordance with the principles of the present invention.

Included in the EPG 74 is an advertisement 78 that has been transmitted  
5 with the EPG as described above. The advertisement 78 is selectable by the user 38 by highlighting the advertisement 78 via the navigation keys 42 on the remote 40. *Selectable* also means any other manner in which a certain area, icon, and/or text may be chosen by the user 38 via a television control device and/or system. It should be appreciated that the advertisement 78 is exemplary  
10 and/or representational of the an advertisement in accordance with the principles of the present invention. As such an advertisement in accordance with the present principles may consist of a single area or icon selectable by the user as represented by area 78, a still frame advertisement that is selectable by the user 38 or contain an icon therein as could be produced in display ad areas 84 and  
15 86, or a video having selectable areas/icons. In all cases, the principles of the present invention are the same. Selection of the area 78 preferably causes a separate advertisement page, screen, frame or video to be shown on the display 34. As well, in all cases, the television 32 may play accompanying audio.

With reference to Fig. 5, an advertisement page 88 as is caused to be  
20 shown by selection of the area 78 is shown on the display 34. The advertisement page 88 may include a header area 90 where a trademark, name or other information may be displayed, a live video area 92 that may show the television channel that was being watched previous to selection of the advertisement or relative to the advertisement, a text area 94, and selectable  
25 icons 96 and 98. One icon 98 ("Cancel") allows the user 38 to cancel the pending purchase transaction. If this option is selected, the advertisement page 88 will cease being shown on the display 34 and the display 34 will return to the previously displayed video/screen. Another icon 96 ("Call Now") allows the user 38 to order the product. A text area 94 may also be displayed to provide the  
30 user 38 information about the product before ordering. Selecting the icon 96 begins the ordering process.

Upon selection of the icon 96 the ordering process commences and the screen 88 may be replaced with that shown in Fig. 6 or the EPG as was previously being displayed on the television 32. In any case, the television 32 returns to display audio and video of a particular channel and/or overlay such as the EPG. A progress or status box or area 100 is preferably superimposed, overlaid, or projected onto the current television channel. The text within the progress box 100 may change as the ordering process takes place in accordance with what is occurring. In Fig. 6, the text of the progress box 100 is indicating that the television 32 is in the process of connecting to an order process location.

With reference back to Fig. 3, the television 32 is operable to connect to an order process location, such as a call center 64 or the like, via the modem 56. When the user 38 initiates the ordering process, the modem is caused to dial a telephone number for the order process location 64 that handles the ordering. The auxiliary information sent with the advertisement includes the telephone number of an order fulfillment center or order process location 64. The order process location 64 may be a central order processing center that handles orders for different products for the same or different advertisers, a call center or office for a single advertiser, or the like.

In any case, the call center 64 includes a telephone switch 66 that connects a modem of a modem bank 68 (or a single modem) to the modem 56 of the calling television 32 and establishes a data connection between the television 32 and the call center 64. The modem 68 is preferably under control of a host computer 70. Once the data connection is established, various personal and other identifying data (i.e. a user's profile) that has been previously stored in the television 32 is downloaded to the host computer 70. The personal and other identifying data or information relative to the user is previously stored in the RAM 52 of the television 32 preferably through a set-up screen as is known in the art. Such information may include: 1) the name of the user; 2) the home address of the user; 3) a mailing address of the user; 4) the telephone number of the user; 5) credit card information necessary to pay for the order; 6) television ID, and the like. During the set-up process for inputting and storing

the various personal and other identifying data into the television 32, the user 38 has the option of what and how much of such information to include. The information is stored on the television 32 and is obtained via a two-way data connection such as a modem or a two-way pager connection and not through the Internet. Data encryption may also be used. The more information stored in the television the less information the user must manually give to an order taker, and thus the less time to complete the ordering/purchasing transaction.

If the call center 64 is busy, the television 32 will keep trying to connect to the call center 64. If there is a problem with the downloading of the data from the television 32 after a data connection is made with the call center 64 the television 32 will keep trying to download the data to the call center 64. Once the information stored in the television 32 has been downloaded to the host computer 70 of the call center 64, call predictive software operating on the host computer 70 determines when and/or how long it will take for a live order taker 72 (agent) to be free to speak with the user and complete the purchase transaction. The length of time until a live order taker 72 may speak with the user depends on the current and queued call in load. During the time after the data has been downloaded from the television 32 and the user is waiting to speak with an order taker 72, the television 32 continues to maintain a data connection and provide text in the status box 100 that the transaction is proceeding. Once it has been determined that an order taker 72 is or will be quickly available, the television 32 will automatically mute the audio, and flash a message 108 such as that shown in Fig. 8, indicating that it is time to pick up the telephone 60 and complete the ordering transaction.

The modems 56 and 68 continue to maintain a data connection until the user 38 comes on line with the telephone 60. When the user 38 comes on line with the telephone 60, the CPU 48 will detect that the user has come on line and send a signal to the telephone switch 66 to bring on the live order taker 72 to complete the ordering transaction. Detection may be accomplished by any number of well-known solutions. The order taker 72 may obtain any information not downloaded by the host computer 70, or may just confirm to the user that the order has been received and provide an estimate of the shipping time. When

the user 38 comes on line with the telephone 60, the television 32 reverts to normal television operation.

If, at any time before the user 38 speaks with an order taker 72, the user 38 wants to cancel the ordering process, the user 38 may press, for example, 5 SELECT on the remote 40. This will cause an order cancel screen such as that shown in Fig. 7 to be shown on the display 34. With reference to Fig. 7, the user 38 is provided information within the text area 94 and the choice from two selectable icons, a stop call icon 104 that will cancel the ordering process, and a continue icon 106 that will allow the ordering process to proceed.

10 As well, the user 38 may change and view various channels on the television 32 during the ordering process when the television modem 56 and the call center modem 68 still maintain a data connection.

A delay time (or specific time) could be downloaded to the television 32 after the purchase information is transferred if it is determined by the call 15 center 64 predictive software that such is necessary (delay mode). This may be necessary when it is determined that it may take an order taker too long to respond and/or be cost effective to the call center 64. It may not be cost effective to the call center 64 to stay on the line for a long time since a toll-free number is typically provided for the customer by the call center 64. If this is the 20 case, the call center 64 would send a signal to the television 32 that the line should be dropped (disconnected). This allows the user to receive telephone calls while waiting for the live agent. The television 32 would drop the line and then telephone the call center 64 after the delay (or at the specific time). This action would be transparent to the user 38, with the television 32 continuing to 25 display the fact that a purchase is pending, and that the live agent would be available. Another way is for the host computer 70 to call directly the user's home after the transfer of information and the live agent is available. Variations of the above are, as well, possible.

In order to more fully appreciate the principles of the present invention, 30 reference is now made to Fig. 10. Fig. 10 is a block diagram, generally designated 120, of a method of providing on-line shopping for a consumer via a television (eTV) with either a modem or pager. In block 122, an advertisement in

accordance with the principles of the present invention as set forth herein is provided (broadcast). Since this is broadcast as part of the television signal, any television configured as set forth herein may take advantage of the present invention. The advertisement with the auxiliary data is shown on a consumer's television, block 124, when appropriate. Typically the advertisement is shown when the consumer tunes a particular channel on the television.

In block 126, the consumer selects a "buy" or "purchase" icon being displayed on the television via a controller indicating the consumer's decision to purchase a product/service. An OSD is produced on the display 34 that the purchase is underway, block 128. In block 130, the television 32 calls a vendor via the modem 56, the telephone number of which is part of the auxiliary data sent with the advertisement. When the call center 64 answers, a data link is established between the television (the modem 56) and the vendor (the call center 64 modem 68) in order to send data stored in the television 32 to the vendor (the call center 64 host computer 70), block 132. In block 134, after the transfer of data from the television 32 to the host computer 70, evidence by signaling between the modem 56 of the television 32 and the host computer 70 of the call center 64, the system (television 32) waits for a live operator (a customer order taker 72) to be connected to the telephone line. The data link between the television 32 and the call center 64 is maintained.

When a live agent 72 will be available to complete the order and connects to the telephone line, an OSD is provided on the display 34 indicating that it is time for the consumer to pick up the telephone 60. The call center software then provides a signal to mute the audio of the television 32, block 136. The data link between the television 32 and the call center 64 is retained until the consumer comes on-line via the telephone 60, block 138. When the customer picks up the telephone 60, the modem 56 must disconnect for the agent (customer order taker 72) to come on-line (i.e. the call is transferred to the agent), block 140. The modem 56 may send a signal to indicate it is time to disconnect, simply drop the line, or any other solution to indicate that the customer has picked up the telephone 60. After the agent comes on line, the



modem 56 of the television 32 disconnects, block 142, and any OSD on the display 34 is removed, block 144.

Thereafter, the customer speaks directly with the live agent to complete the purchase transaction giving any information not stored and/or transmitted from the television 32 to the host computer 70 and/or receiving any information from the live agent, block 146. If at this time, the customer wishes to purchase/add another item, they can do so since the pertinent information has already been transferred. When the purchase transaction is complete, the telephone is disconnected, block 148, and the television 32 returns to normal operation, block 150.

With reference to Fig. 9, there is depicted an alternative method of establishing communication between the television 32a and the call center 64. As well, it should be appreciated that Fig. 9 shows that several televisions 32 may be in contact with the call center 64 via different methods. It should be appreciated that the call center 64 is adapted to receive telephone calls from a plurality of televisions. In addition to the embodiment of Fig. 3 which is reproduced in Fig. 9, a television 32a may use a two-way pager 58a to establish contact with the call center 64. It should also be appreciated that the call center 64 is preferably adapted to take voice orders on its toll-free (or toll) line.

In this regard, the television 32a is configured to utilize the pager 58a to transmit a message and/or signal to a pager facility 110. The pager facility 110 then uses a telephone network 112 (or any other communications network) to reach a communications company 114 that relays the information to the call center 64. The call center 64 may, as well, provide a message and/or signal to the television 32a via the same channel of communication.

Specifically, a user confirms his/her desire to purchase a product/service as described above. The previously stored user data is put into a transmit buffer to transfer to a paging network. The user data is sent to the two-way pager 58a which is transmitted to a receiving station 110. The paging network 112 receives the user data and transfers it to the call center 64 (host computer 70) via known solutions. The call center 64 software, by looking at the number of calls in progress estimates the wait time needed for this customer to speak with

a live agent and communicates this wait time to the paging network 112. The paging network 112 sends this information via station 110 to the two-way pager 58a. This signal is an order confirmation time wait information (time period or specific time) that is received by the television 32a.

5           When the specified time has elapsed, the television 32a will automatically call the call center 64. The modem 68 will transfer any customer information previously stored that was not completed during the initial contact via the pager network. The remainder of the purchase transaction takes place as described above.

10           It should be appreciated that the use of the two-way pager 58a minimizes the use of the telephone line, as the call is only made just prior to the availability of the agent. This minimizes telephone line use during ordering and waiting time for the customer, as well as minimizing the toll-free telephone number costs for the call center.

15           Rather than utilizing a pager or telephone to initiate/complete the purchase transaction, the television 32 may include a cell modem/phone. The cell modem/phone is capable of transmitting both data and voice over a cell phone network (digital and/or analog) rather than using a modem or pager and a telephone. The television would be equipped with a microphone coupled to the  
20           telephone line, so that the television also functions as a telephone. In this manner, the user would speak directly to the order taker through the television without the need to separately pick up the telephone when the agent is ready to come on-line. The purchase transaction would proceed as above, including the OSD information on the television. All other aspects of the present invention  
25           would also remain the same.

          As well, the modem, pager or cell phone may be used as the communication channel on both ends. This would be useful if a particular broadcaster (or rebroadcaster) typically strips the information from the VBI.

30           While this invention has been described as having a preferred design and/or configuration, the present invention can be further modified within the spirit and scope of this disclosure. This application is therefore intended to cover any variations, uses, or adaptations of the invention using its general principles.

Further, this application is intended to cover such departures from the present disclosure as come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims.

Claims

## WHAT IS CLAIMED IS:

## 1. A television system comprising:

a receiver configured to receive a television signal and auxiliary data

5 associated therewith, the auxiliary data permitting a user to initiate the purchase of a product or service associated with said television signal;

memory coupled to said receiver and adapted to contain user information;  
and

10 communication means for automatically establishing a connection with an order center in response to the user.

2. The television system of claim 1, wherein said communication means is one of a modem, a two-way pager and cell phone.

## 15 3. The television system of claim 1, further comprising:

an on-screen display unit adapted to show a purchase initiation icon on a display coupled to said television system in response to the auxiliary data, said purchase initiation icon being selectable by the user to initiate the purchase of the product or service.

20

## 4. The television system of claim 3, further comprising:

a control system adapted to allow selection of said purchase initiation icon.

5. The television system of claim 4, wherein said communication means  
25 establishes a voice connection between the user and an agent of the order center.

## 6. The television system of claim 1, further comprising:

means for muting audio of the receiver upon establishment of the voice  
30 connection between the user and an agent of the order center.

7. A method of in-home shopping utilizing a television system, said method comprising:

receiving a television signal comprising auxiliary data associated with said television signal;

5 displaying a selectable purchase initiation icon for the purchase of the product or service associated with said television signal in response to at least a portion of the auxiliary data;

selecting the purchase initiation icon to initiate the purchase of the product or service;

10 establishing a data connection between the television system and an order center for the product or service;

downloading user information stored in the memory to the order center after establishment of the data connection; and

15 establishing a voice connection between the user and an agent of the order center.

8. The method of claim 7, wherein the step of establishing a data connection between the television and an order center upon selection of the purchase initiation icon is accomplished with one of a modem, a two-way pager and a cell  
20 phone.

9. The method of claim 7, wherein the step of showing a selectable purchase initiation icon along with the advertisement on the display in response to at least a portion of the auxiliary data is accomplished with an on-screen display unit.  
25

10. The method of claim 7, wherein the step of permitting a user to select the purchase initiation icon to initiate purchase of a product or service in response to viewing the advertisement on the display is accomplished utilizing a remote controller coupled to said television system.  
30

11. The method of claim 7, further comprising the step of:

showing status of the purchase of the product or service on the display during purchase initiation and data downloading of the user information.

12. The method of claim 11, further comprising the step of:

5 muting audio of the television upon establishment of the voice connection between the user and the agent of the order center.

13. A television operable to provide in-home shopping comprising:

- a) a selector operable to receive a television signal having an  
10 advertisement for a product or service and associated auxiliary information;
  - b) a processing unit;
  - c) a display operable to show the television signal and the advertisement;
  - d) an on-screen display unit operable to produce a selectable initiate  
purchase icon on the display for the purchase of the product or service of the  
15 advertisement in response to the auxiliary information and in conjunction with the advertisement;
  - e) a control system operable to allow a user to select the initiate purchase icon;
  - f) communication means operable to establish a data connection,  
20 download information, and establish a voice connection; and
  - g) memory in communication with said processing unit, said memory containing user information and a plurality of instructions which, when executed by the processing unit causes:
    - 1) the communication means to establish the data connection  
25 between the television and a remote order location upon the user selecting the initiate purchase icon to initiate a purchase transaction for the product or service of the advertisement;
    - 2) the communication means to download the user information upon establishment of a data connection between the television and an order location;
- 30 and

3) the communication means to establish a voice connection between the user and an agent of the order location upon completion of the downloading of the user information.

- 5    14. The television of claim 13, wherein the memory contains further instructions which, when executed by the processing unit, causes the:

audio of the television to mute upon establishment of the voice connection.

- 10   15. The television of claim 13, wherein the memory contains further instructions which, when executed by the processing unit, causes the:

display to show a status of the purchase transaction.

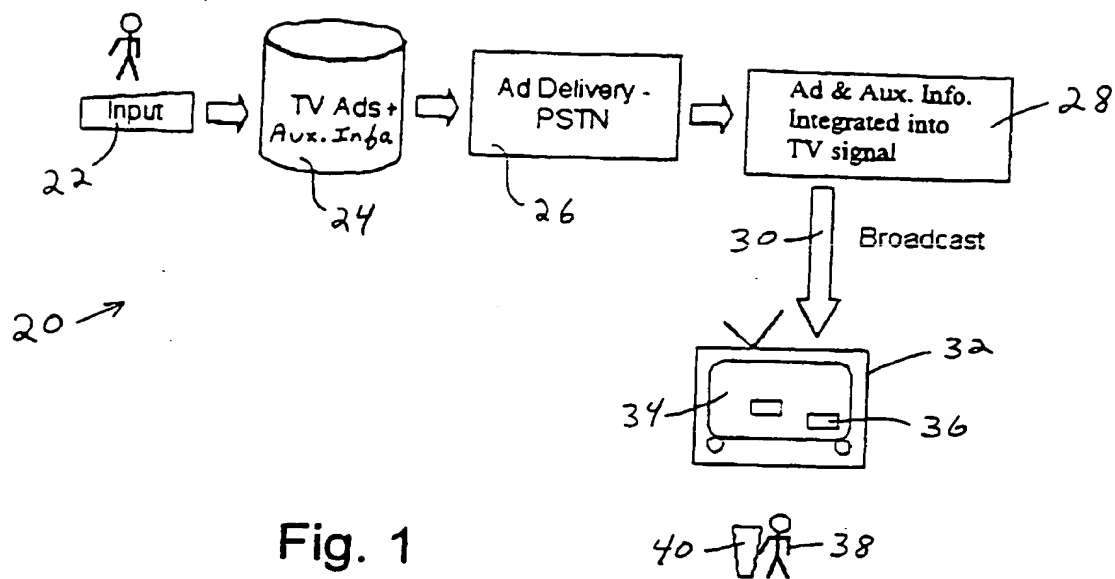


Fig. 1

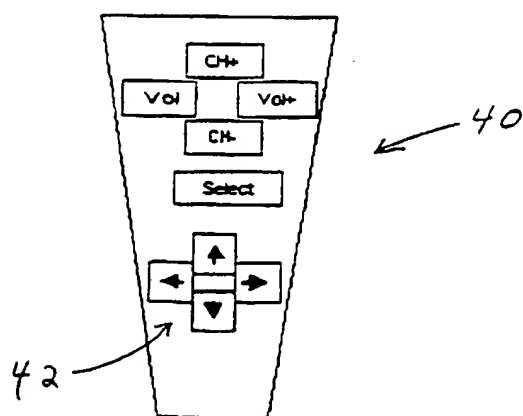


Fig. 2



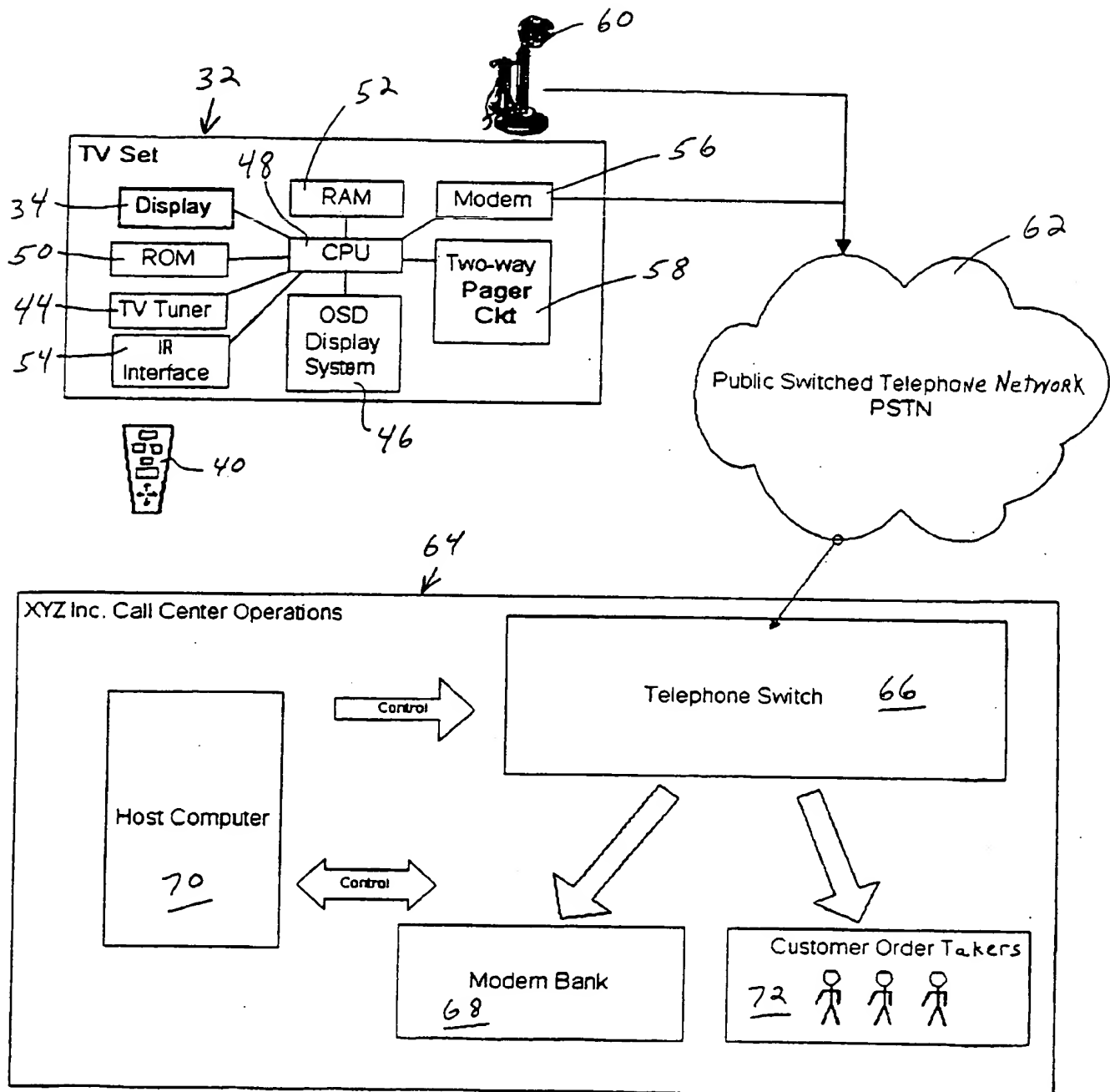


Fig. 3

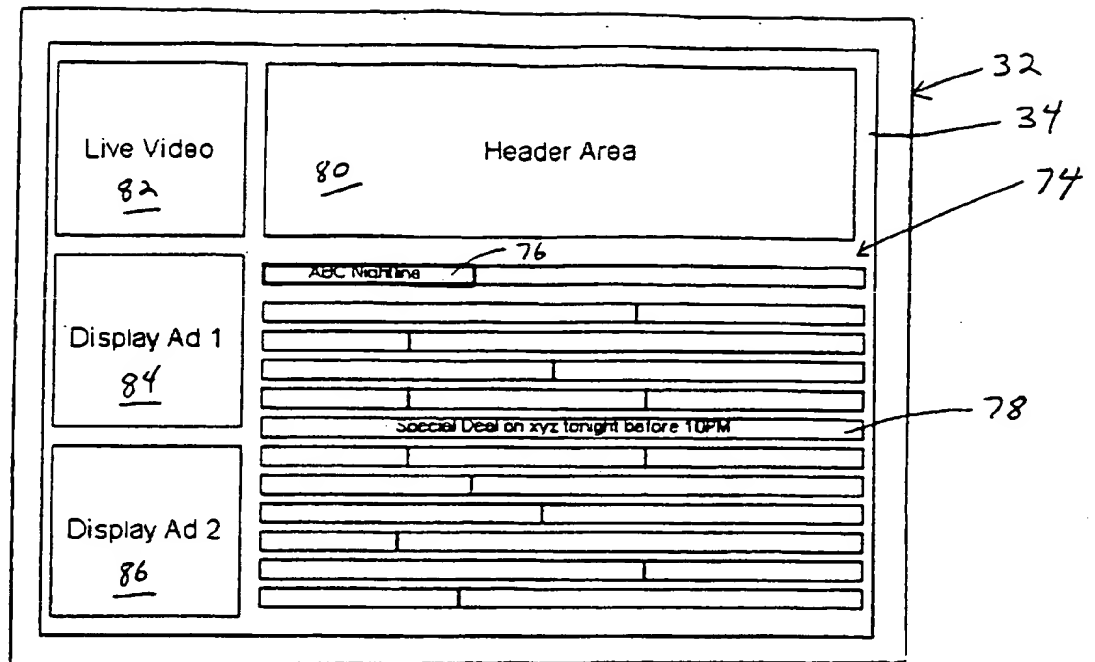


Fig. 4

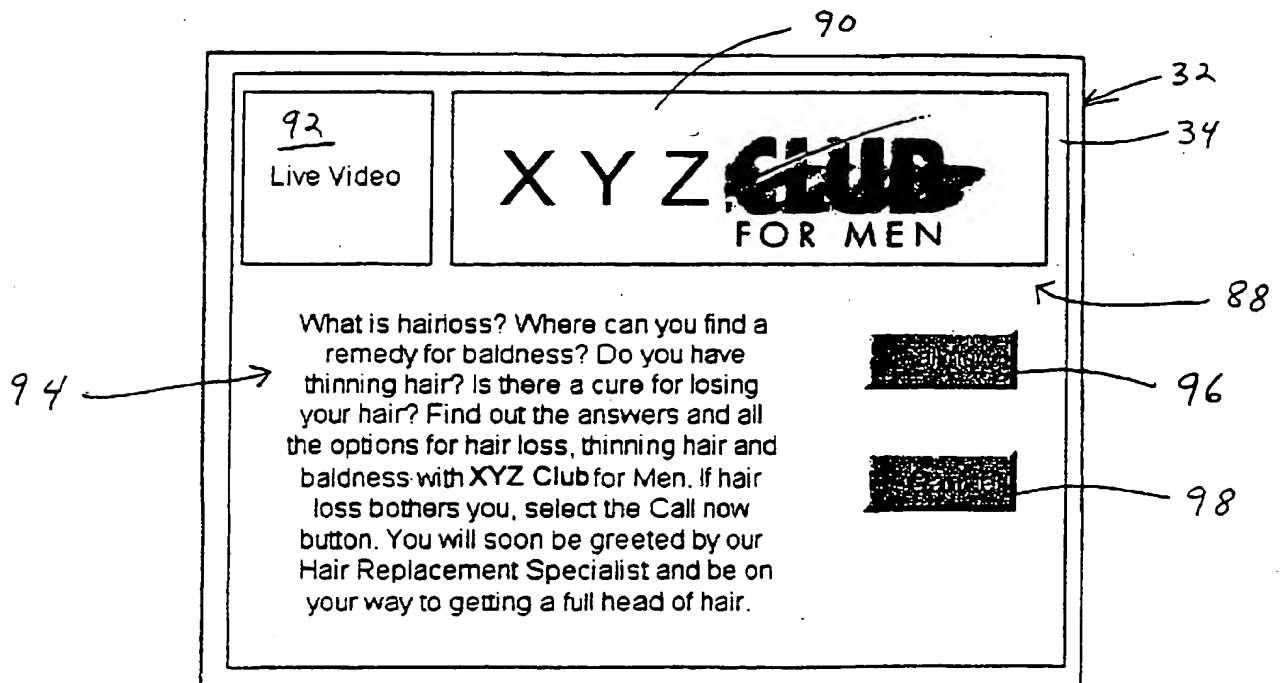


Fig. 5



Fig. 6

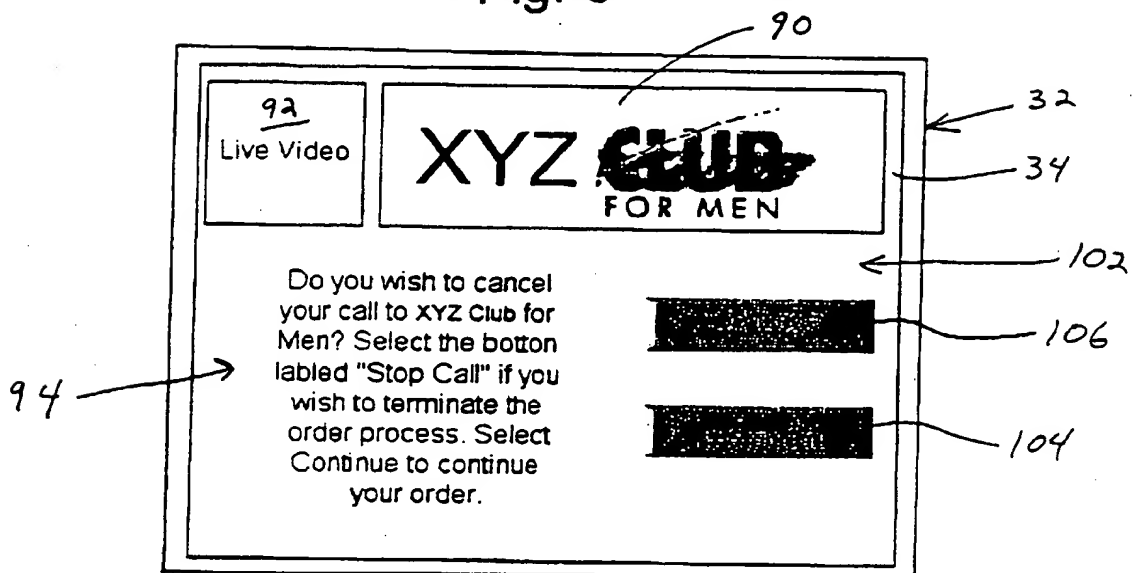


Fig. 7

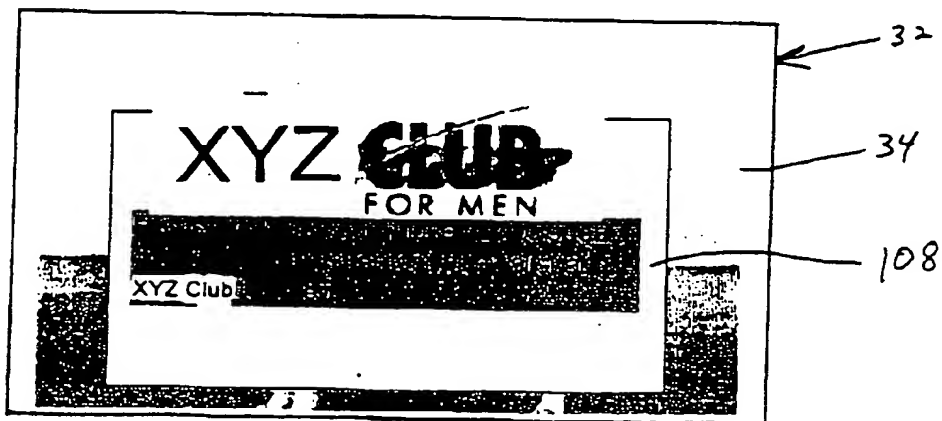


Fig. 8

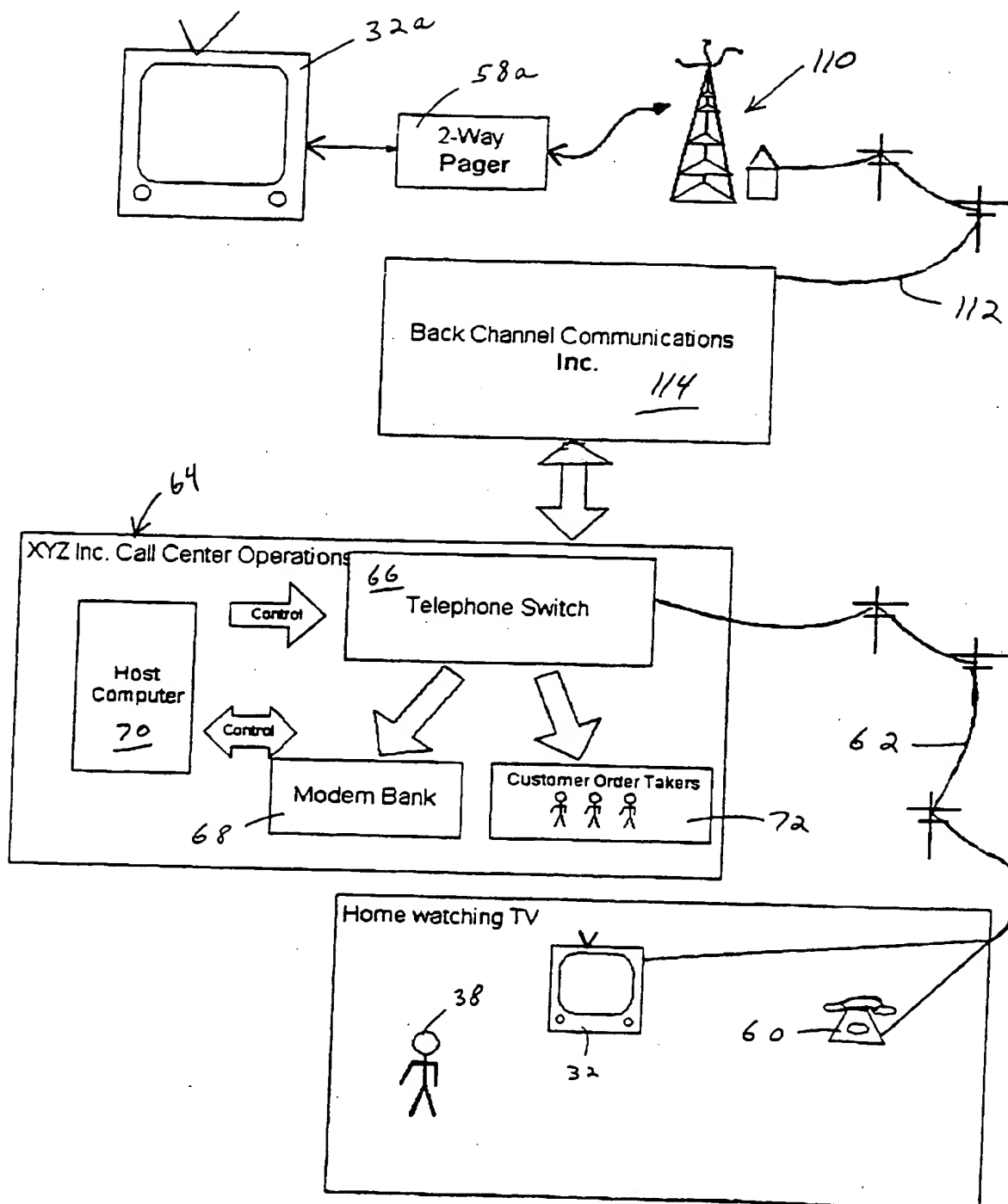


Fig. 9

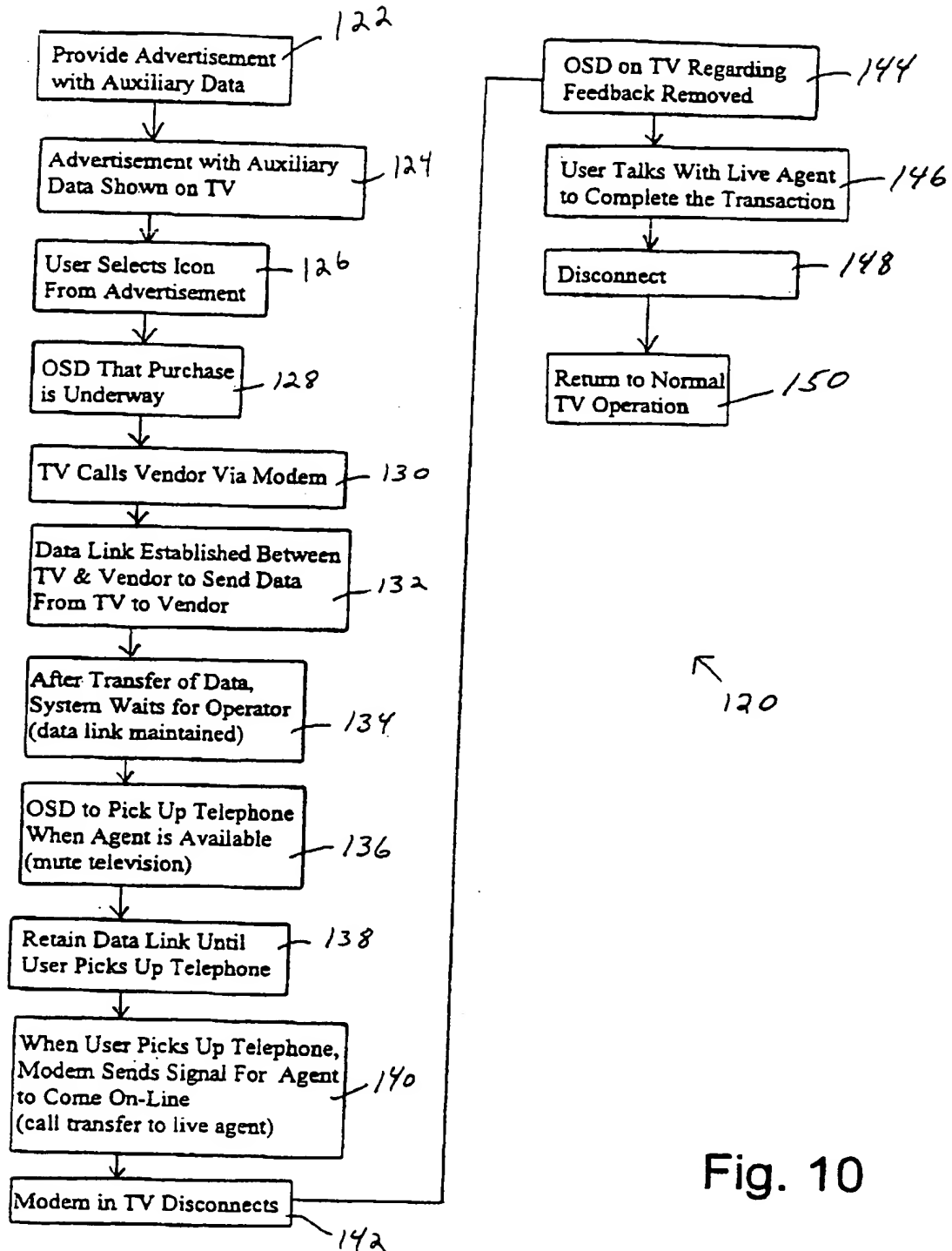


Fig. 10

## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US 00/11383

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04N7/173

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 99 04568 A (FERRIS GAVIN ROBERT ; FLORENCE PETER CHARLES (GB); RADIOSCAPE LIMIT) 28 January 1999 (1999-01-28)	1, 7, 13
A	the whole document	2-6, 8-12, 14, 15
Y	WO 98 00976 A (SUN MICROSYSTEMS INC ; THOMSON CONSUMER ELECTRONICS (US)) 8 January 1998 (1998-01-08)	1
A	page 9, line 4 - page 12, line 2 page 14, line 14 - line 20 page 29, line 1 - line 27	2-15
Y	US 5 553 064 A (PAFF THOMAS M ET AL) 3 September 1996 (1996-09-03)	7, 13
A	the whole document	1-6, 8-12, 14

-/-

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

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\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*Z\* document member of the same patent family

Date of the actual completion of the international search

11 July 2000

Date of mailing of the international search report

18/07/2000

Name and mailing address of the ISA

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/11383

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 195 07 091 A (METZ WERKE GMBH & CO KG) 14 September 1995 (1995-09-14) column 1, line 34 -column 2, line 16 ---	1-14
A	WO 98 17064 A (WESTBERG THOMAS E ;KWOH DANIEL S (US); LEUNG ELSIE Y (US); MANKOVI) 23 April 1998 (1998-04-23) page 2, line 1 -page 3, line 2 -----	1-15

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/11383

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9904568	A	28-01-1999	EP 0995313 A	26-04-2000
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			AU 3648797 A	21-01-1998
			EP 0909513 A	21-04-1999
US 5553064	A	03-09-1996	EP 0754378 A	22-01-1997
			JP 10501930 T	17-02-1998
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			BR 9712352 A	31-08-1999
			CN 1251723 A	26-04-2000
			EP 0932979 A	04-08-1999



CORRECTED VERSION

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
9 November 2000 (09.11.2000)

PCT

(10) International Publication Number  
**WO 00/67484 A1**

(51) International Patent Classification<sup>7</sup>: **H04N 7/173**

(21) International Application Number: **PCT/US00/11383**

(22) International Filing Date: **28 April 2000 (28.04.2000)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:  
60/131,980 30 April 1999 (30.04.1999) **US**

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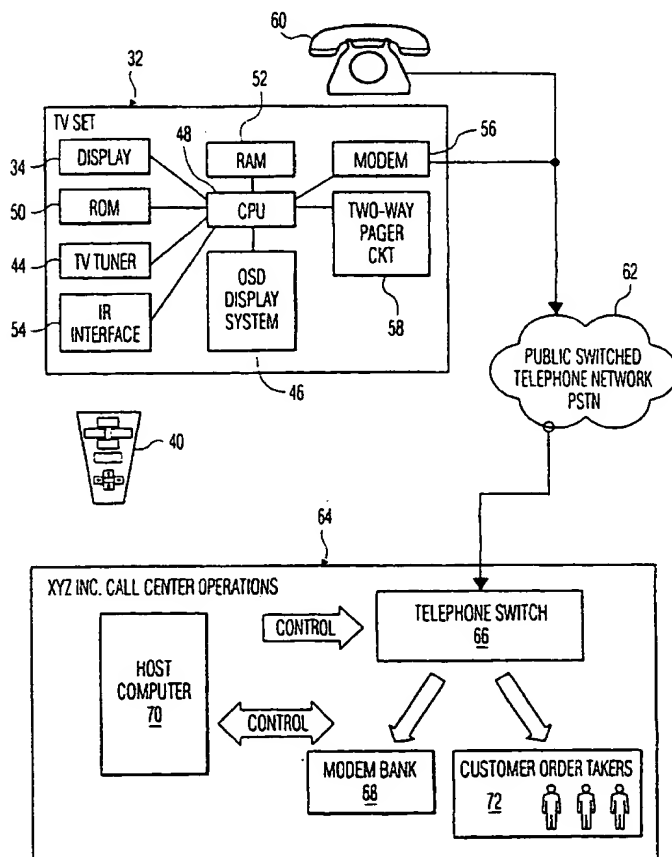
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(81) Designated States (national): **AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.**

[Continued on next page]

(54) Title: **E-COMMERCE TELEVISION**



(57) Abstract: A system and method for providing automated television shopping performs automatic telephone dialing for product purchase. Auxiliary information communicated with the television programming provides a user selectable icon or area that corresponds to an item, product or service to be purchased. The icon may be a part of or constitute an advertisement that is divorced from the television programming or may be associated with the television programming. Selection of the icon by the user via a control system begins the ordering process by establishing a back channel connection from the television to a dedicated call center modem/computer preferably by a modem in the television. User data previously stored by the television may be initially communicated to the call center computer. The user is signaled via an on-screen display message to speak with the live agent once the live agent is available to complete the transaction while the television drops the connection to allow the user and agent to continue with minimal interchange.

WO 00/67484 A1



(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(48) Date of publication of this corrected version:

18 April 2002

(15) Information about Correction:

see PCT Gazette No. 16/2002 of 18 April 2002, Section II

Published:

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## E-COMMERCE TELEVISION

### Cross Reference to Related Applications

This is a non-provisional U.S. patent application based on provisional U.S.  
5 patent application serial number 60/131,980 filed April 30, 1999 entitled  
"eCommerce Enhancement Using eTV for Automation."

### Field of the Invention

The present invention relates to television systems and, more particularly,  
10 to television systems which utilize the auxiliary information associated with a  
television program signal to establish a communication channel.

### Background of the Invention

Today, television programming for the home viewer is available from many  
15 sources such as, terrestrial broadcasting, cable distribution, satellite broadcasting  
or the like. The television programming may be provided in an analog and/or  
digital format. In either case, the television programming includes audio and  
video information for a plurality of channels and may also include other  
information, for example, closed captioning, program ratings ("V-chip"),  
20 stock/data tickers, or the like.

Typically advertisements associated with television programs encouraged  
viewers to purchase a product or service the next time they went shopping or  
needed the service. With the widespread use of credit cards and the like, the  
use of toll-free telephone numbers displayed along with the commercial permitted  
25 the viewer to call and immediately place an order for the product or service.  
Today, networks such as QVC® and the Home Shopping Network® devote their  
entire programming to selling products and services. With advances in television  
broadcasting and reception technology, advertisements for products and/or  
services may now be sent along with the audio and video information for use  
30 with electronic program guides (EPGs) or the like, and displayed on the television  
integral with the EPG or the like.

However, in all of the above cases, a viewer must either call a telephone number, and tender payment by credit card or mail in payment in order to purchase the product/service being advertised on the television. Ordering via the telephone is generally a time-consuming and frustrating event for the consumer.

5 Telephone operators are busy during the times when the infomercial or advertisement is being aired and thus the consumer is faced with telephone busy signals and being put on hold. If the consumer does not reach an operator, he/she will generally not call back.

## 10 Summary of the Invention

The present invention provides an in-home shopping system that permits a user to initiate a purchase of a product or service in response to viewing an advertisement on the user's television without utilizing the Internet. Particularly, the present invention assists the user by establishing a telephone connection  
15 with minimal user involvement. That is, the home shopping experience is improved by reducing the time spent on the telephone when ordering products advertised on the television.

Further, the present invention provides a system for advertising a product on a television and for providing a means for ordering the product via the  
20 television. The purchase transaction may be partially accomplished by the television through the transfer of user data previously stored in the television. In one form, the present invention is a television system comprising: a) a receiver configured to receive a television signal and auxiliary data associated therewith, the auxiliary data permitting a user to initiate the purchase of a product or service  
25 associated with the television signal; b) memory coupled to the receiver and adapted to contain user information; and c) communication means for automatically establishing a connection with an order center in response to the user.

In another form, the present invention is a method of in-home shopping  
30 utilizing a television system. The method comprises: a) receiving a television signal comprising auxiliary data associated with the television signal; b) displaying a selectable purchase initiation icon for the purchase of the product or

service associated with the television signal in response to at least a portion of the auxiliary data; c) selecting the purchase initiation icon to initiate the purchase of the product or service; d) establishing a data connection between the television system and an order center for the product or service; e) downloading  
5 user information stored in the memory to the order center after establishment of the data connection; and f) establishing a voice connection between the user and an agent of the order center.

In yet another form, the present invention is a television operable to provide in-home shopping. The television comprises: a) a selector operable to  
10 receive a television signal having an advertisement for a product or service and associated auxiliary information; b) a processing unit; c) a display operable to show the television signal and the advertisement; d) an on-screen display unit operable to produce a selectable initiate purchase icon on the display for the purchase of the product or service of the advertisement in response to the  
15 auxiliary information and in conjunction with the advertisement; e) a control system operable to allow a user to select the initiate purchase icon; f) communication means operable to establish a data connection, download information, and establish a voice connection; and g) memory in communication with the processing unit, the memory containing user information and a plurality  
20 of instructions which, when executed by the processing unit causes: 1) the communication means to establish the data connection between the television and a remote order location upon the user selecting the initiate purchase icon to initiate a purchase transaction for the product or service of the advertisement; 2) the communication means to download the user information upon establishment  
25 of a data connection between the television and an order location; and 3) the communication means to establish a voice connection between the user and an agent of the order location upon completion of the downloading of the user information.

#### Brief Description of the Drawings

30 Reference to the following description of the present invention should be taken in conjunction with the accompanying drawings, wherein:

Fig. 1 is a block diagram of a system for advertisement delivery to a user's television;

Fig. 2 is an enlarged depiction of a remote that may be used as a control device;

5 Fig. 3 is a block diagram of the present system in accordance with the principles of the present invention;

Fig. 4 is a depiction of a television display incorporating the selectable auxiliary information;

10 Fig. 5 is a depiction of a television display after selection of auxiliary information;

Fig. 6 is a depiction of a television display after commencing the ordering process from the television display of Fig. 5;

Fig. 7 is a depiction of a television display upon selection of a SELECT function from the television display of Fig. 6;

15 Fig. 8 is a depiction of a television display upon completion of data exchange between the television and a remote call center;

Fig. 9 is a block diagram depicting an alternative method of communication for the present system; and

20 Fig. 10 is a flow chart of an exemplary advertising and ordering/purchasing process in accordance with the principles of the present invention.

Corresponding reference characters indicate corresponding parts throughout the several views.

### Detailed Description of the Invention

25 With reference now to Fig. 1, there is shown a block diagram of a system, generally designated 20 for the development, insertion, and broadcast or transmission of an advertisement or the like to a remote television. The advertisement incorporates auxiliary information or data at least some of which is selectable by the user of the remote television in accordance with an aspect of  
30 the present invention. It should be appreciated that the term *advertisement* means a commercial of any length including what are known as infomercials, a still frame, picture or graphic, or any audio/video presentation, animated or not,

for an offer to sell a product, good and/or service that is able to be formatted and broadcast as or within a television signal. *Auxiliary information* includes data that allows the television to display a selectable icon or icons or a selectable area or areas on the television typically within the advertisement, generally through an on-screen display (OSD) unit. *Auxiliary information* also includes data for communicating information concerning a selection from the television via a back channel to a call center or the like. The auxiliary information may contain software for operating the television 32 or for providing additional functionality thereto.

10 In particular, a produced or created advertisement 22 having embedded or added auxiliary information or data is stored in a central system, computer or server 24. The server 24 transmits or delivers, as depicted in box 26 one or more of the advertisements stored therein to a television broadcast station 28 where the advertisement and auxiliary information is incorporated into the television signal. Transmission or delivery of the advertisement or  
15 advertisements and auxiliary information may be accomplished via any method such as by the Internet, a public switch telephone network (PSTN), or similar delivery medium. The broadcast station 28 then broadcasts, represented by arrow 30, the advertisement and auxiliary information along with the television  
20 signal. Broadcasting includes terrestrial, cable, satellite, or any other manner of transmitting a television signal from one point to another point.

The advertisement and auxiliary information may be recorded and stored on a reproduction medium (i.e. a tape) and transported to a broadcasting facility for incorporation into the television signal. As well, the advertisement and  
25 auxiliary information may be directly broadcast after being generated.

In the case of an analog television signal, if the advertisement is a still picture, graphic or the like, the advertisement and auxiliary data are preferably formatted into the vertical blanking interval (VBI) of the television signal. If the advertisement is a commercial or infomercial having audio and video content, the  
30 commercial may be transmitted as a normal television signal with the auxiliary information transmitted in the VBI. Thus, in the case of an analog television signal, the auxiliary information is preferably inserted into the VBI, while the

advertisement itself may be in the VBI or transmitted as a television signal. In the case of a digital television signal, both the advertisement (in whatever form) and the auxiliary information are formatted or packetized for digital transmission in accordance with the chosen encoding scheme and modulation technique as are known in the art.

Various signal formats for embedding the auxiliary information in the television program signals are available. For example, a protocol known as ATVEF proposed by the Advance Television Enhancement Forum, an alliance of television communication and computer companies is advantageous. The protocol is based on the HTML (HyperText Markup Language) utilized in the Internet. The ATVEF protocol also may be used with both analog and digital television systems. Of course, other protocols may be used.

The broadcast television signal is received and processed by a television 32. The television 32 includes a display 34 that is depicted showing an icon 36 that is selectable by a user 38 through a suitable control system for the television 32, the icon 36 being sent as at least a portion of the auxiliary information. Selection of the icon 36 and other television control functions as are known in the art are preferably performed via a remote control unit (remote) 40. It should be appreciated, however, that other television control methods may be used. The remote 40 may be used to highlight an area of the display 34 or move a cursor or the like to a particular area on the display 34.

In Fig. 2, there is shown the remote 40 in greater detail. The remote 40 usually includes at least a channel up button (CH +), a channel down button (CH-), a volume up button (VOL +), and a volume down button (VOL-). In addition, a SELECT button is provided for allowing the selection of a highlighted icon, menu choice or the like shown on the display 34. In addition, the remote 40 includes various navigation buttons 42 that at least permit the user 38 to highlight a particular icon or menu choice and/or position a cursor onto or over a particular area of the display 34. A typical remote also includes a plurality of other control/selection buttons that are not depicted in Fig. 2 for clarity with regard to the present invention depending on the features of the television. The remote 40 is preferably an infrared (IR) type remote but may be radio frequency



(RF) or any other type that allows control signals to be transmitted therefrom and received by the television 32. The television 32 must, of course, be configured and/or adapted to receive whatever type of signals are transmitted/sent from the remote 40.

5           Once the advertisement is received by the television 32, the advertisement and other information may be shown on the display 34 of the television 32 in a variety of ways depending on the format of the advertisement. If the advertisement is a still (single) frame, picture or graphic with or without text, it may be displayed in conjunction with any television programming on any  
10   channel. The entire advertisement or a portion thereof is selectable to initiate the ordering process. If the advertisement is a commercial, infomercial, network, or the like having video and possibly audio content, the advertisement may consist only of a selectable icon or area, such as an "Order Now" icon that is displayed over or along with the video content.

15           With reference to Fig. 3, there is depicted the television 32 incorporating a block diagram of the various components of the television 32 that allow the television 32 to operate in accordance with the principles of the present invention. The television 32 includes a television signal selector or tuner 44 that is configured to receive a television signal/advertisement as described above.

20   The selector 44 is in communication with a central processing unit (CPU) 48 as is typical in the art. An IR interface 54 is in communication with the CPU 48 and is adapted to receive the control signals from the remote 40. It should be appreciated that if the remote 40 operates other than by infrared, the IR interface 54 represents an interface/circuitry necessary to receive the signals from the  
25   remote 40.

          The television 32 also includes read only memory (ROM) 50 and random access memory (RAM) 52 as are well known in the art. The television 32 further includes an on-screen display (OSD) processing unit 46 that is in communication with the CPU 46 and is configured to provide the display 34 with OSD  
30   information. The OSD processing/generating unit 46 allows the display of selectable icons on the display 34. OSD information is part of the auxiliary data transmitted with the advertisement.

The television 32 may also include a two-way pager circuit 58 that is in communication with the CPU 48 the purpose of which will be described below with reference to Fig. 9. As well, the television 32 may include a modem 56 or similar device that is in communication with the CPU 48 and a telephone network 62, such as a public switched telephone network (PSTN) as is known in the art. A conventional telephone 60 is also in communication with the telephone network 62. It should be appreciated that the television 32 and telephone 60 are typically located in the user's home. Other interconnections of the various components of the television 32 that are not shown are possible and probable.

With reference to Fig. 4, there is depicted the television 32 showing a screen layout particularly depicting an electronic program guide (EPG) or listing 74 on the display 34. The EPG 74 is a typical EPG grid that lists a plurality of programs/listings (of which the listing "ABC Nightline" 76 is shown) within current and upcoming time slots that may be viewed on the various channels of the television 32. The listing 76 is outlined to denote that it is highlighted. Such highlighting can be moved around the EGP 74 and the various other areas on the display 34 through the use of the navigation keys 42 on the remote 40 (see Fig. 2). If the user 38 selects the highlighted program listing (here via the SELECT button on the remote 40), the television is tuned to that channel and the EPG 74 is removed from the display 34.

It should be appreciated that the EPG 74 described herein is only exemplary and/or representative of a manner of providing/presenting an advertisement or advertisements with auxiliary information as per the principles of the present invention. The advertisement(s) may be provided in other manners not depicted and/or particularly described herein such as an advertisement area overlaying or adjacent a television program and/or an advertisement icon overlaying an infomercial, commercial, or the like.

In Fig. 4, the EPG 74 may include a header area 80 where various header information may be displayed, a live video area 82 in which live video is shown generally relative to the program highlighted on the EPG grid 74, a first display advertisement area 84, and a second display advertisement area 86. The first

and second advertisement areas 84 and 86 may or may not include OSD auxiliary information that is selectable in accordance with the principles of the present invention.

Included in the EPG 74 is an advertisement 78 that has been transmitted with the EPG as described above. The advertisement 78 is selectable by the user 38 by highlighting the advertisement 78 via the navigation keys 42 on the remote 40. *Selectable* also means any other manner in which a certain area, icon, and/or text may be chosen by the user 38 via a television control device and/or system. It should be appreciated that the advertisement 78 is exemplary and/or representational of the an advertisement in accordance with the principles of the present invention. As such an advertisement in accordance with the present principles may consist of a single area or icon selectable by the user as represented by area 78, a still frame advertisement that is selectable by the user 38 or contain an icon therein as could be produced in display ad areas 84 and 86, or a video having selectable areas/icons. In all cases, the principles of the present invention are the same. Selection of the area 78 preferably causes a separate advertisement page, screen, frame or video to be shown on the display 34. As well, in all cases, the television 32 may play accompanying audio.

With reference to Fig. 5, an advertisement page 88 as is caused to be shown by selection of the area 78 is shown on the display 34. The advertisement page 88 may include a header area 90 where a trademark, name or other information may be displayed, a live video area 92 that may show the television channel that was being watched previous to selection of the advertisement or relative to the advertisement, a text area 94, and selectable icons 96 and 98. One icon 98 ("Cancel") allows the user 38 to cancel the pending purchase transaction. If this option is selected, the advertisement page 88 will cease being shown on the display 34 and the display 34 will return to the previously displayed video/screen. Another icon 96 ("Call Now") allows the user 38 to order the product. A text area 94 may also be displayed to provide the user 38 information about the product before ordering. Selecting the icon 96 begins the ordering process.

Upon selection of the icon 96 the ordering process commences and the screen 88 may be replaced with that shown in Fig. 6 or the EPG as was previously being displayed on the television 32. In any case, the television 32 returns to display audio and video of a particular channel and/or overlay such as the EPG. A progress or status box or area 100 is preferably superimposed, overlaid, or projected onto the current television channel. The text within the progress box 100 may change as the ordering process takes place in accordance with what is occurring. In Fig. 6, the text of the progress box 100 is indicating that the television 32 is in the process of connecting to an order process location.

With reference back to Fig. 3, the television 32 is operable to connect to an order process location, such as a call center 64 or the like, via the modem 56. When the user 38 initiates the ordering process, the modem is caused to dial a telephone number for the order process location 64 that handles the ordering. The auxiliary information sent with the advertisement includes the telephone number of an order fulfillment center or order process location 64. The order process location 64 may be a central order processing center that handles orders for different products for the same or different advertisers, a call center or office for a single advertiser, or the like.

In any case, the call center 64 includes a telephone switch 66 that connects a modem of a modem bank 68 (or a single modem) to the modem 56 of the calling television 32 and establishes a data connection between the television 32 and the call center 64. The modem 68 is preferably under control of a host computer 70. Once the data connection is established, various personal and other identifying data (i.e. a user's profile) that has been previously stored in the television 32 is downloaded to the host computer 70. The personal and other identifying data or information relative to the user is previously stored in the RAM 52 of the television 32 preferably through a set-up screen as is known in the art. Such information may include: 1) the name of the user; 2) the home address of the user; 3) a mailing address of the user; 4) the telephone number of the user; 5) credit card information necessary to pay for the order; 6) television ID, and the like. During the set-up process for inputting and storing

the various personal and other identifying data into the television 32, the user 38 has the option of what and how much of such information to include. The information is stored on the television 32 and is obtained via a two-way data connection such as a modem or a two-way pager connection and not through the Internet. Data encryption may also be used. The more information stored in the television the less information the user must manually give to an order taker, and thus the less time to complete the ordering/purchasing transaction.

If the call center 64 is busy, the television 32 will keep trying to connect to the call center 64. If there is a problem with the downloading of the data from the television 32 after a data connection is made with the call center 64 the television 32 will keep trying to download the data to the call center 64. Once the information stored in the television 32 has been downloaded to the host computer 70 of the call center 64, call predictive software operating on the host computer 70 determines when and/or how long it will take for a live order taker 72 (agent) to be free to speak with the user and complete the purchase transaction. The length of time until a live order taker 72 may speak with the user depends on the current and queued call in load. During the time after the data has been downloaded from the television 32 and the user is waiting to speak with an order taker 72, the television 32 continues to maintain a data connection and provide text in the status box 100 that the transaction is proceeding. Once it has been determined that an order taker 72 is or will be quickly available, the television 32 will automatically mute the audio, and flash a message 108 such as that shown in Fig. 8, indicating that it is time to pick up the telephone 60 and complete the ordering transaction.

The modems 56 and 68 continue to maintain a data connection until the user 38 comes on line with the telephone 60. When the user 38 comes on line with the telephone 60, the CPU 48 will detect that the user has come on line and send a signal to the telephone switch 66 to bring on the live order taker 72 to complete the ordering transaction. Detection may be accomplished by any number of well-known solutions. The order taker 72 may obtain any information not downloaded by the host computer 70, or may just confirm to the user that the order has been received and provide an estimate of the shipping time. When

the user 38 comes on line with the telephone 60, the television 32 reverts to normal television operation.

If, at any time before the user 38 speaks with an order taker 72, the user 38 wants to cancel the ordering process, the user 38 may press, for example, SELECT on the remote 40. This will cause an order cancel screen such as that shown in Fig. 7 to be shown on the display 34. With reference to Fig. 7, the user 38 is provided information within the text area 94 and the choice from two selectable icons, a stop call icon 104 that will cancel the ordering process, and a continue icon 106 that will allow the ordering process to proceed.

As well, the user 38 may change and view various channels on the television 32 during the ordering process when the television modem 56 and the call center modem 68 still maintain a data connection.

A delay time (or specific time) could be downloaded to the television 32 after the purchase information is transferred if it is determined by the call center 64 predictive software that such is necessary (delay mode). This may be necessary when it is determined that it may take an order taker too long to respond and/or be cost effective to the call center 64. It may not be cost effective to the call center 64 to stay on the line for a long time since a toll-free number is typically provided for the customer by the call center 64. If this is the case, the call center 64 would send a signal to the television 32 that the line should be dropped (disconnected). This allows the user to receive telephone calls while waiting for the live agent. The television 32 would drop the line and then telephone the call center 64 after the delay (or at the specific time). This action would be transparent to the user 38, with the television 32 continuing to display the fact that a purchase is pending, and that the live agent would be available. Another way is for the host computer 70 to call directly the user's home after the transfer of information and the live agent is available. Variations of the above are, as well, possible.

In order to more fully appreciate the principles of the present invention, reference is now made to Fig. 10. Fig. 10 is a block diagram, generally designated 120, of a method of providing on-line shopping for a consumer via a television (eTV) with either a modem or pager. In block 122, an advertisement in

accordance with the principles of the present invention as set forth herein is provided (broadcast). Since this is broadcast as part of the television signal, any television configured as set forth herein may take advantage of the present invention. The advertisement with the auxiliary data is shown on a consumer's television, block 124, when appropriate. Typically the advertisement is shown  
5 when the consumer tunes a particular channel on the television.

In block 126, the consumer selects a "buy" or "purchase" icon being displayed on the television via a controller indicating the consumer's decision to purchase a product/service. An OSD is produced on the display 34 that the  
10 purchase is underway, block 128. In block 130, the television 32 calls a vendor via the modem 56, the telephone number of which is part of the auxiliary data sent with the advertisement. When the call center 64 answers, a data link is established between the television (the modem 56) and the vendor (the call center 64 modem 68) in order to send data stored in the television 32 to the  
15 vendor (the call center 64 host computer 70), block 132. In block 134, after the transfer of data from the television 32 to the host computer 70, evidence by signaling between the modem 56 of the television 32 and the host computer 70 of the call center 64, the system (television 32) waits for a live operator (a customer order taker 72) to be connected to the telephone line. The data link  
20 between the television 32 and the call center 64 is maintained.

When a live agent 72 will be available to complete the order and connects to the telephone line, an OSD is provided on the display 34 indicating that it is time for the consumer to pick up the telephone 60. The call center software then provides a signal to mute the audio of the television 32, block 136. The  
25 data link between the television 32 and the call center 64 is retained until the consumer comes on-line via the telephone 60, block 138. When the customer picks up the telephone 60, the modem 56 must disconnect for the agent (customer order taker 72) to come on-line (i.e. the call is transferred to the agent), block 140. The modem 56 may send a signal to indicate it is time to  
30 disconnect, simply drop the line, or any other solution to indicate that the customer has picked up the telephone 60. After the agent comes on line, the

modem 56 of the television 32 disconnects, block 142, and any OSD on the display 34 is removed, block 144.

Thereafter, the customer speaks directly with the live agent to complete the purchase transaction giving any information not stored and/or transmitted  
5 from the television 32 to the host computer 70 and/or receiving any information from the live agent, block 146. If at this time, the customer wishes to purchase/add another item, they can do so since the pertinent information has already been transferred. When the purchase transaction is complete, the telephone is disconnected, block 148, and the television 32 returns to normal  
10 operation, block 150.

With reference to Fig. 9, there is depicted an alternative method of establishing communication between the television 32a and the call center 64. As well, it should be appreciated that Fig. 9 shows that several televisions 32 may be in contact with the call center 64 via different methods. It should be  
15 appreciated that the call center 64 is adapted to receive telephone calls from a plurality of televisions. In addition to the embodiment of Fig. 3 which is reproduced in Fig. 9, a television 32a may use a two-way pager 58a to establish contact with the call center 64. It should also be appreciated that the call center 64 is preferably adapted to take voice orders on its toll-free (or toll) line.

In this regard, the television 32a is configured to utilize the pager 58a to  
20 transmit a message and/or signal to a pager facility 110. The pager facility 110 then uses a telephone network 112 (or any other communications network) to reach a communications company 114 that relays the information to the call center 64. The call center 64 may, as well, provide a message and/or signal to  
25 the television 32a via the same channel of communication.

Specifically, a user confirms his/her desire to purchase a product/service as described above. The previously stored user data is put into a transmit buffer to transfer to a paging network. The user data is sent to the two-way pager 58a which is transmitted to a receiving station 110. The paging network 112  
30 receives the user data and transfers it to the call center 64 (host computer 70) via known solutions. The call center 64 software, by looking at the number of calls in progress estimates the wait time needed for this customer to speak with



a live agent and communicates this wait time to the paging network 112. The paging network 112 sends this information via station 110 to the two-way pager 58a. This signal is an order confirmation time wait information (time period or specific time) that is received by the television 32a.

5           When the specified time has elapsed, the television 32a will automatically call the call center 64. The modem 68 will transfer any customer information previously stored that was not completed during the initial contact via the pager network. The remainder of the purchase transaction takes place as described above.

10           It should be appreciated that the use of the two-way pager 58a minimizes the use of the telephone line, as the call is only made just prior to the availability of the agent. This minimizes telephone line use during ordering and waiting time for the customer, as well as minimizing the toll-free telephone number costs for the call center.

15           Rather than utilizing a pager or telephone to initiate/complete the purchase transaction, the television 32 may include a cell modem/phone. The cell modem/phone is capable of transmitting both data and voice over a cell phone network (digital and/or analog) rather than using a modem or pager and a telephone. The television would be equipped with a microphone coupled to the  
20           telephone line, so that the television also functions as a telephone. In this manner, the user would speak directly to the order taker through the television without the need to separately pick up the telephone when the agent is ready to come on-line. The purchase transaction would proceed as above, including the OSD information on the television. All other aspects of the present invention  
25           would also remain the same.

          As well, the modem, pager or cell phone may be used as the communication channel on both ends. This would be useful if a particular broadcaster (or rebroadcaster) typically strips the information from the VBI.

          While this invention has been described as having a preferred design  
30           and/or configuration, the present invention can be further modified within the spirit and scope of this disclosure. This application is therefore intended to cover any variations, uses, or adaptations of the invention using its general principles.

Further, this application is intended to cover such departures from the present disclosure as come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims.

Claims

## WHAT IS CLAIMED IS:

## 1. A television system comprising:

a receiver configured to receive a television signal and auxiliary data  
5 associated therewith, the auxiliary data permitting a user to initiate the purchase  
of a product or service associated with said television signal;

memory coupled to said receiver and adapted to contain user information;  
and

communication means for automatically establishing a connection with an  
10 order center in response to the user.

2. The television system of claim 1, wherein said communication means is one  
of a modem, a two-way pager and cell phone.

## 15 3. The television system of claim 1, further comprising:

an on-screen display unit adapted to show a purchase initiation icon on a  
display coupled to said television system in response to the auxiliary data, said  
purchase initiation icon being selectable by the user to initiate the purchase of  
the product or service.

20

## 4. The television system of claim 3, further comprising:

a control system adapted to allow selection of said purchase initiation  
icon.

5. The television system of claim 4, wherein said communication means  
25 establishes a voice connection between the user and an agent of the order  
center.

## 6. The television system of claim 1, further comprising:

means for muting audio of the receiver upon establishment of the voice  
30 connection between the user and an agent of the order center.

7. A method of in-home shopping utilizing a television system, said method comprising:

receiving a television signal comprising auxiliary data associated with said television signal;

5 displaying a selectable purchase initiation icon for the purchase of the product or service associated with said television signal in response to at least a portion of the auxiliary data;

selecting the purchase initiation icon to initiate the purchase of the product or service;

10 establishing a data connection between the television system and an order center for the product or service;

downloading user information stored in the memory to the order center after establishment of the data connection; and

15 establishing a voice connection between the user and an agent of the order center.

8. The method of claim 7, wherein the step of establishing a data connection between the television and an order center upon selection of the purchase initiation icon is accomplished with one of a modem, a two-way pager and a cell  
20 phone.

9. The method of claim 7, wherein the step of showing a selectable purchase initiation icon along with the advertisement on the display in response to at least a portion of the auxiliary data is accomplished with an on-screen display unit.  
25

10. The method of claim 7, wherein the step of permitting a user to select the purchase initiation icon to initiate purchase of a product or service in response to viewing the advertisement on the display is accomplished utilizing a remote controller coupled to said television system.  
30

11. The method of claim 7, further comprising the step of:

showing status of the purchase of the product or service on the display during purchase initiation and data downloading of the user information.

12. The method of claim 11, further comprising the step of:

5 muting audio of the television upon establishment of the voice connection between the user and the agent of the order center.

13. A television operable to provide in-home shopping comprising:

- a) a selector operable to receive a television signal having an  
10 advertisement for a product or service and associated auxiliary information;
  - b) a processing unit;
  - c) a display operable to show the television signal and the advertisement;
  - d) an on-screen display unit operable to produce a selectable initiate  
purchase icon on the display for the purchase of the product or service of the  
15 advertisement in response to the auxiliary information and in conjunction with the advertisement;
  - e) a control system operable to allow a user to select the initiate purchase icon;
  - f) communication means operable to establish a data connection,  
20 download information, and establish a voice connection; and
  - g) memory in communication with said processing unit, said memory containing user information and a plurality of instructions which, when executed by the processing unit causes:
    - 1) the communication means to establish the data connection  
25 between the television and a remote order location upon the user selecting the initiate purchase icon to initiate a purchase transaction for the product or service of the advertisement;
    - 2) the communication means to download the user information upon establishment of a data connection between the television and an order location;
- 30 and

3) the communication means to establish a voice connection between the user and an agent of the order location upon completion of the downloading of the user information.

5 14. The television of claim 13, wherein the memory contains further instructions which, when executed by the processing unit, causes the:

audio of the television to mute upon establishment of the voice connection.

10 15. The television of claim 13, wherein the memory contains further instructions which, when executed by the processing unit, causes the:

display to show a status of the purchase transaction.

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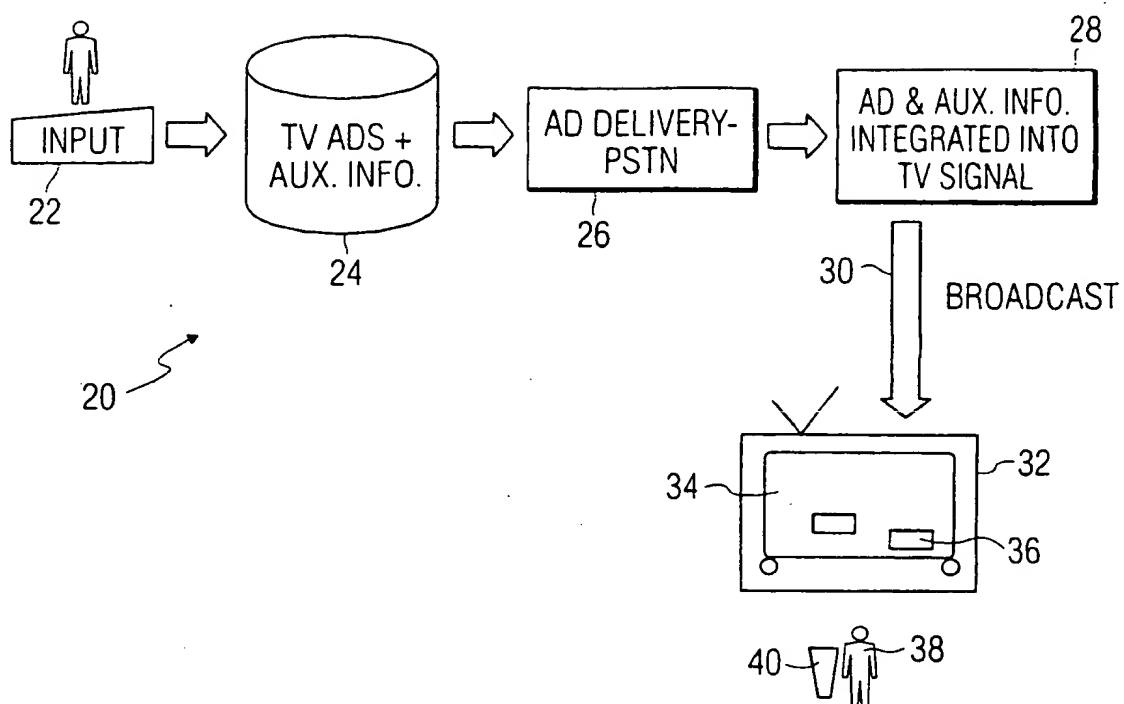


FIG. 1

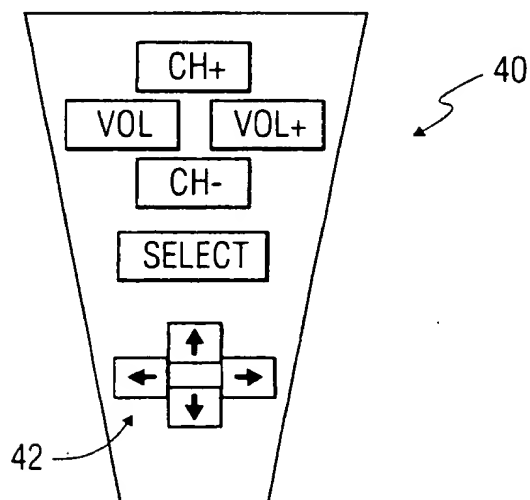


FIG. 2

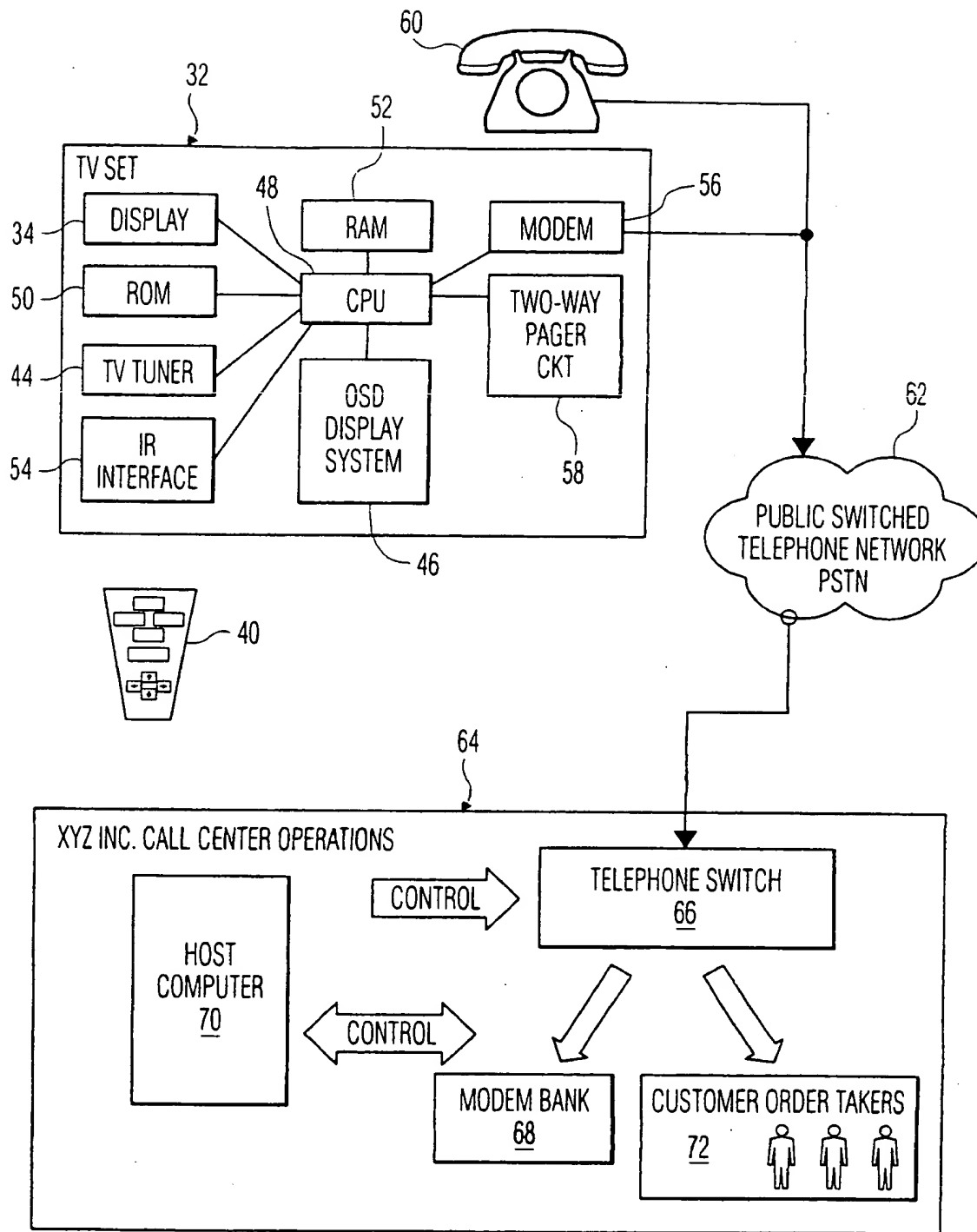


FIG. 3



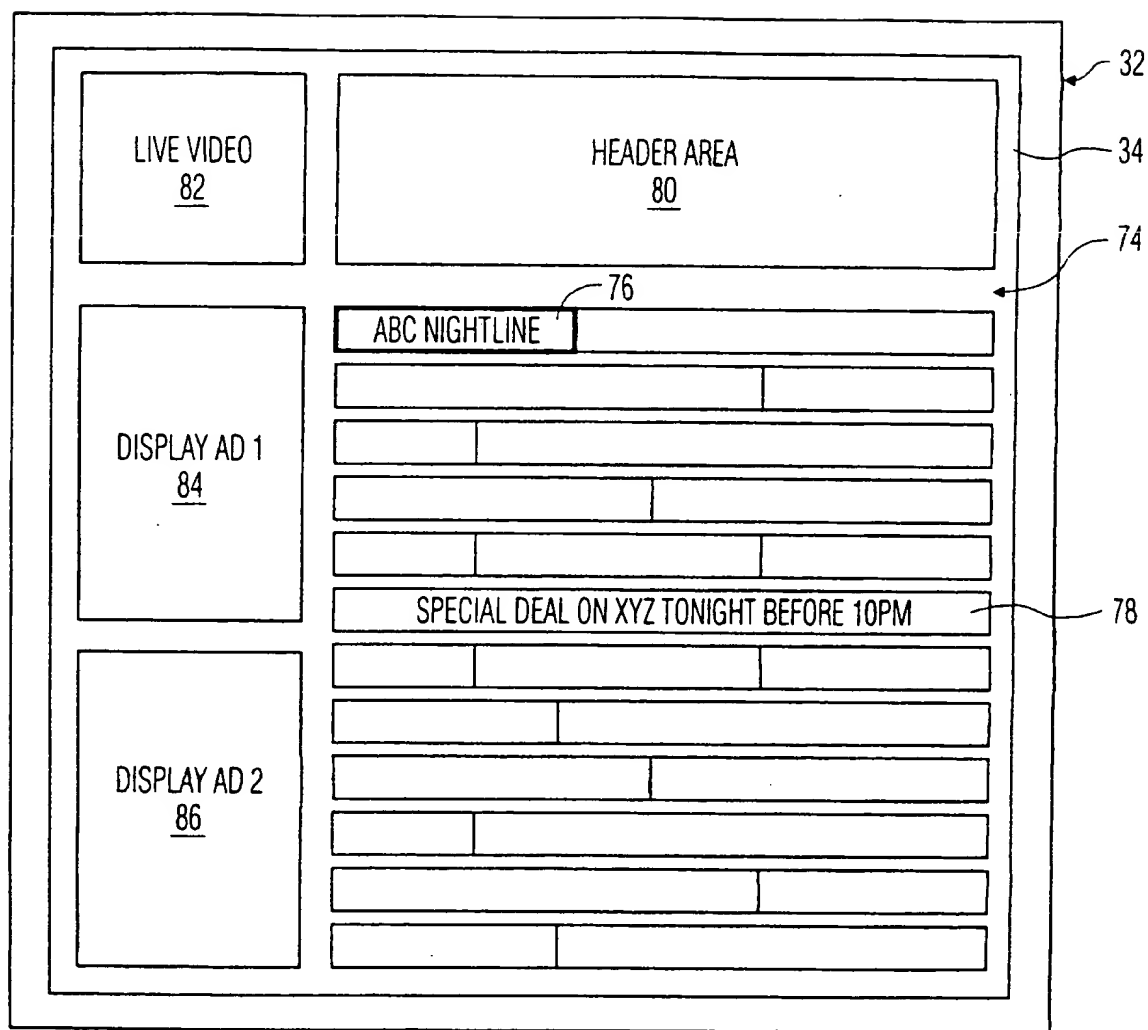


FIG. 4

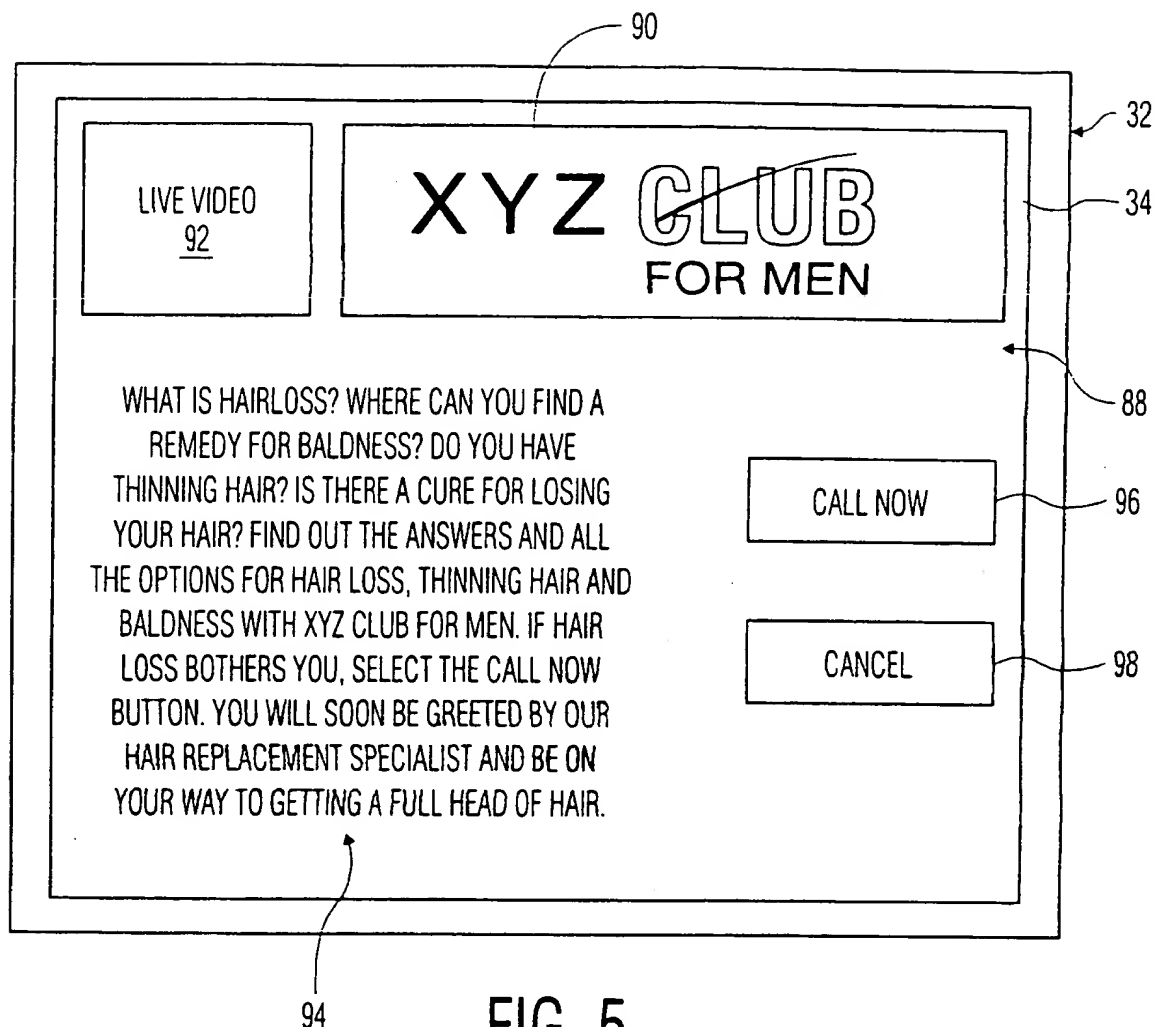


FIG. 5

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FIG. 6

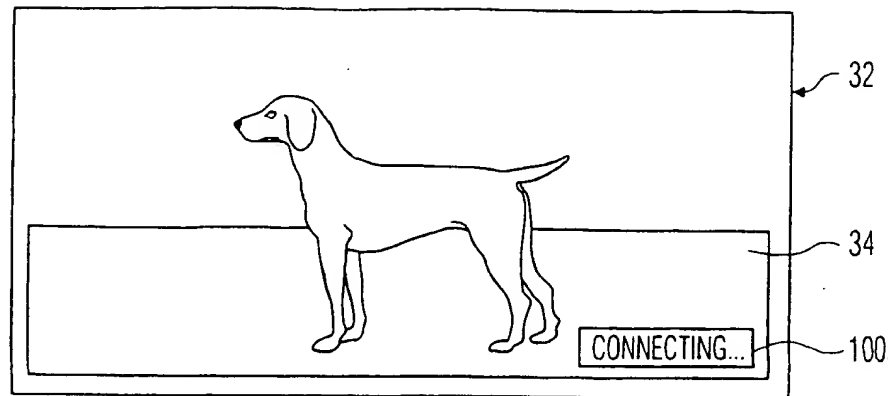


FIG. 7

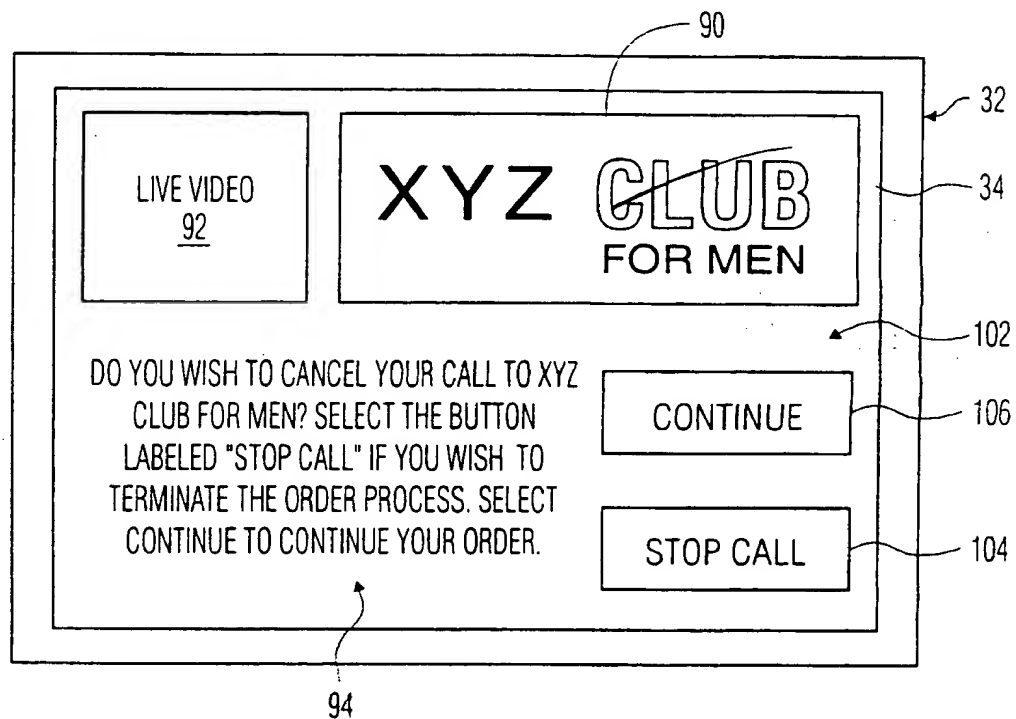
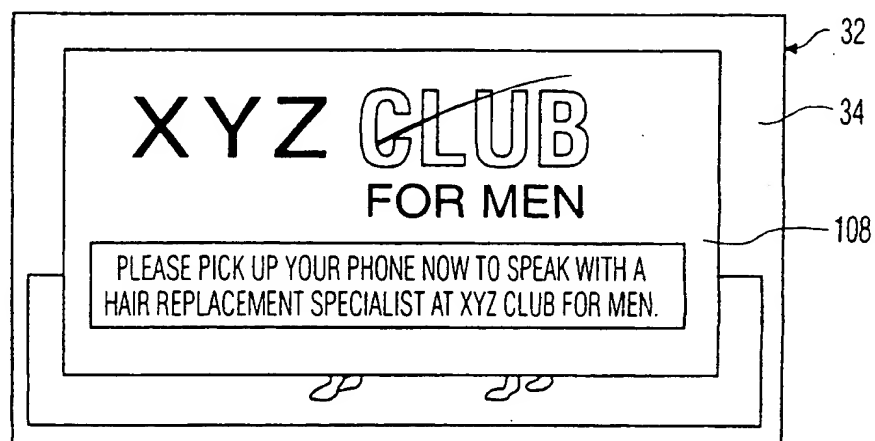


FIG. 8



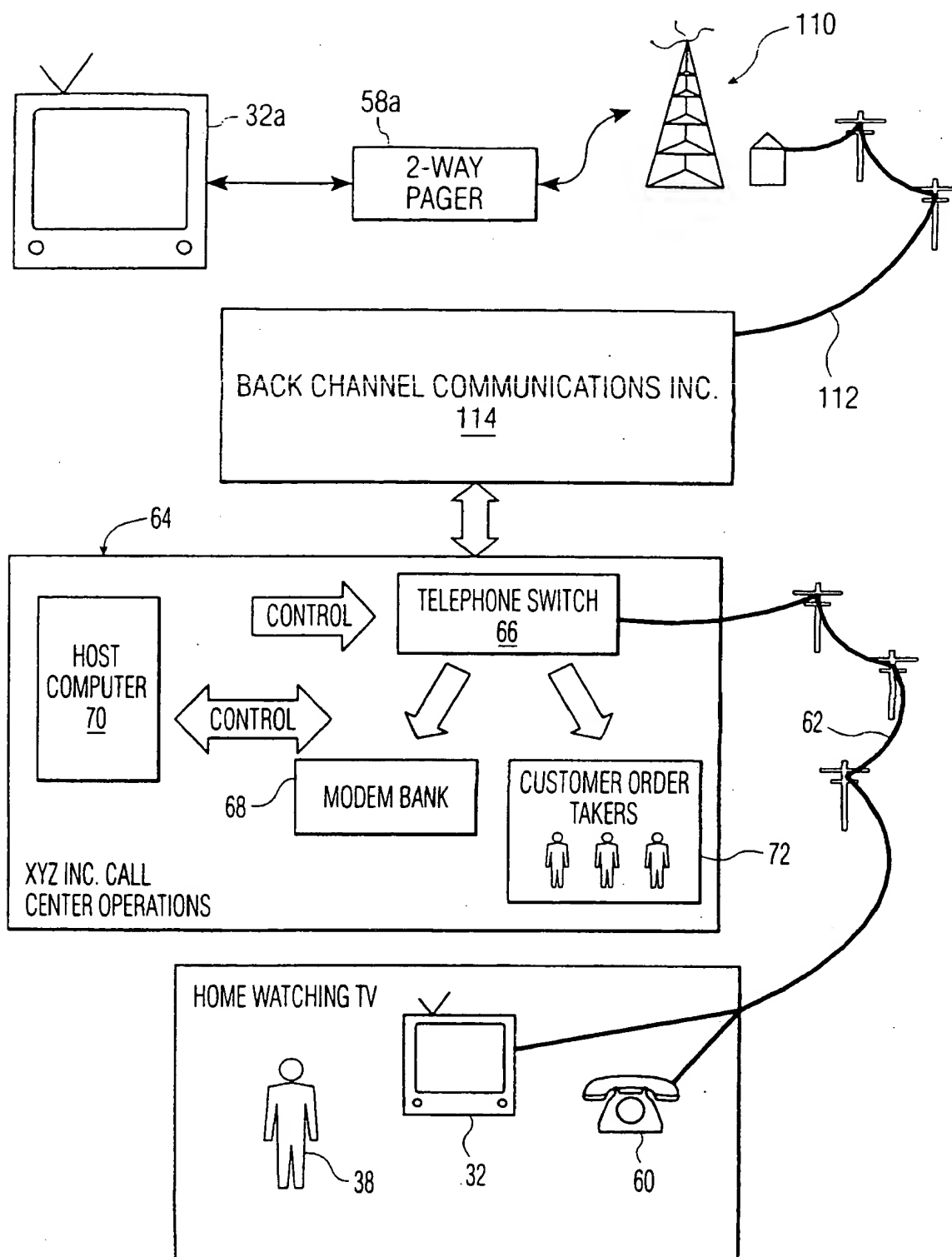


FIG. 9

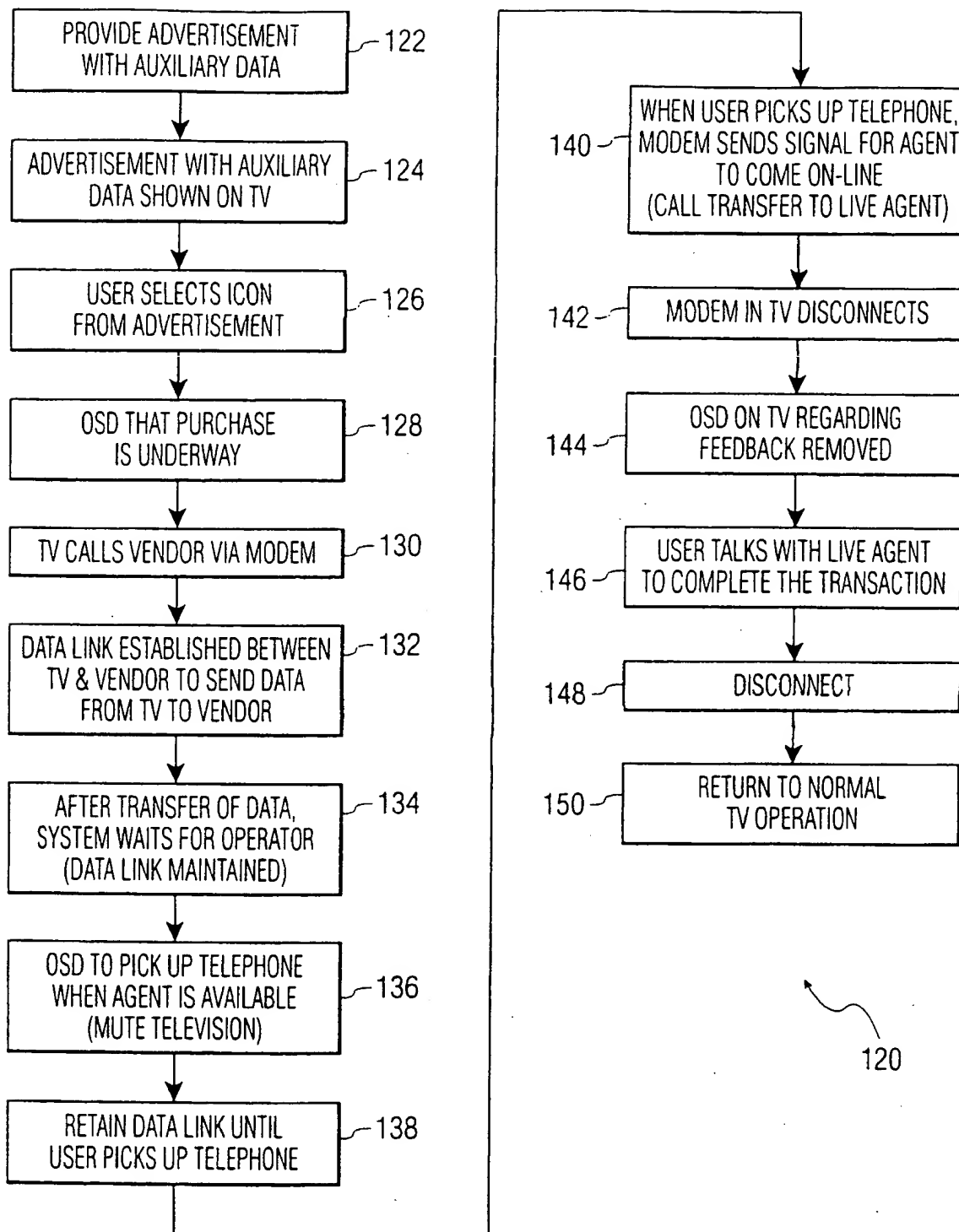


FIG. 10

# INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US 00/11383

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04N7/173

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	WO 99 04568 A (FERRIS GAVIN ROBERT ; FLORENCE PETER CHARLES (GB); RADIOSCAPE LIMIT) 28 January 1999 (1999-01-28) the whole document	1, 7, 13
Y A	WO 98 00976 A (SUN MICROSYSTEMS INC ; THOMSON CONSUMER ELECTRONICS (US)) 8 January 1998 (1998-01-08) page 9, line 4 - page 12, line 2 page 14, line 14 - line 20 page 29, line 1 - line 27	2-6, 8-12, 14, 15  1  2-15
Y A	US 5 553 064 A (PAFF THOMAS M ET AL) 3 September 1996 (1996-09-03) the whole document	7, 13  1-6, 8-12, 14

-/-



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

### \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
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- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*8\* document member of the same patent family

Date of the actual completion of the international search

11 July 2000

Date of mailing of the international search report

18/07/2000

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Greve, M

# INTERNATIONAL SEARCH REPORT

Inter:      nat Application No

PCT/US 00/11383

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	WO 98 17064 A (WESTBERG THOMAS E ;KWOH DANIEL S (US); LEUNG ELSIE Y (US); MANKOVI) 23 April 1998 (1998-04-23) page 2, line 1 -page 3, line 2 -----	1-15

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/11383

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